ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

Vol. XLVII — OAK PARK, ILL., APRIL, 1925 — No. 4

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

GENERAL OFFICERS, 1924-1925

PRESIDENT.....L. C. TAYLOR, Springfield
PRESIDENT-ELECT.....J. C. KRAFFT, Chicago
FIRST VICE-PRESIDENT.....J. R. NEAL, Springfield
SECOND VICE-PRESIDENT.....FRANK MAPLE, Chicago
TREASURER.....A. J. MARKLEY, Belvidere
SECRETARY.....HAROLD M. CAMP, Monmouth
(Ex-Officio Clerk of the Council)

THE COUNCIL

	Term Expires
District 1—David B. Penniman, Rockford	1926
District 2—E. E. Perisho, Streator	1926
District 3—S. J. McNeill, Chicago	1926
R. R. Ferguson, Chicago	1927
John S. Nagle, Chicago	1925
District 4—Wm. D. Chapman, Silvis	1925
District 5—Charles S. Nelson, Springfield	1925
District 6—Henry P. Beirne, Quincy	1927
District 7—L. O. Frech, Decatur	1925
District 8—G. B. Dudley, Charleston	1926
District 9—Andy Hall, Mt. Vernon	1927

S. J. McNeill, Chicago, *Chairman.*

PUBLICATION COMMITTEE

J. W. Van Derslice, *Secretary,* 155 N. Ridgeland Avenue, Oak Park.

EDITOR

DR. CHARLES J. WHALEN.....25 E. Washington St., Chicago

GENERAL COUNSEL

ROBERT J. FOLONIE.....39 S. LaSalle Street, Chicago

MEDICO-LEGAL COMMITTEE

	Term Expires
C. B. KING, *Chairman,* 4100 W. Madison St., Chicago	1925
R. D. HAWTHORNE, Monticello	1927
J. R. BALLINGER, Chicago	1927
C. A. HERCULES, Chicago Heights	1926
C. G. FARNUM, Peoria, *Secretary*	1926
W. F. GRINSTEAD, Cairo	1925

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send original articles and all communications relating to advertisements to Dr. Charles J. Whalen, Editor, 6221 Kenmore Avenue, Chicago.

Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 7626 Bosworth Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

Subscription price of this Journal to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $3.50 per year for all foreign countries included in the postal union. Canada, $3.25. Single current copies, 35 cents. Back numbers, after three months from date of publication, 50 cents.

Editorial

THE QUINCY MEETING

The seventy-fifth annual meeting of the Illinois State Medical Society will be held, as in former years, during the third week of May, 19-20-21. This meeting will be an epoch making one since it will be the Diamond Jubilee Meeting of our state society, as well as that of our hosts, the Adams County Medical Society, both societies having been organized in 1850. An unusual and interesting program is being arranged for, both by the program committee, and the local committee of arrangements. Everything points toward a large attendance, since few of the men now in active practice in Illinois will ever again have an opportunity to attend a jubilee meeting—most of us will have crossed the Great Divide, when the one hundredth mile stone in organized medicine shall have been reached. The Hotel Quincy will be headquarters; reservations may be made by addressing the manager, Hotel Quincy; other hotels, all European, are Newcomb Hotel, Virginia Hotel, Park Hotel, Hasse Hotel. Quincy is one of the most westerly points in Illinois. Physicians residing in the northern part of Illinois, Chicago, etc., may reach us via Burlington Route; those coming from eastern part of the state may conveniently use the Wabash; while those from southern Illinois will obtain better service via St. Louis. Through train service may be had on all of above lines. Some may wish to drive via hard roads, to these will say there is a gap of dirt road about 50 miles east of here which may, if season should be wet, make travel by auto difficult, while if weather should be pleasant, the few miles of dirt roads will not cause any serious inconvenience. A good program, with some novel features, and a good time are assured. We take the liberty to suggest that the secretary of each respective county society will read above at

their next regular meeting. Quincy will be glad to entertain you. Let's go.

WARREN PIERCE,
General Chairman, Committee of Arrangements.

H. P. BEIRNE,
Chairman Publicity and Program Committee.

OVER-THEORIZING AND ULTRA-EXPENSIVE CURRENT SYSTEM OF MEDICAL EDUCATION

PREPARATION VERSUS PRACTICE. MEDICINE CANNOT BE TAUGHT BY BOOKS ALONE. THE OLD "APPRENTICE SYSTEM" MIGHT BE REVIVED IN SOME DEGREE TO GOOD EFFECT

Medical education in America was, at the outset, an absorption of knowledge by the apprentice system. This was the only method by which practitioners could be supplied for the mass population as the academic advantages of European institutions were denied to all except a very few. The magnificent system of American medical schools was as yet unknown.

The very magnificences of this system have fetched in their train such drastic evils that it would appear as if a sudden return to apprentice methods might be of incalculable benefit not only to the patients, but to the physicians themselves.

Unless some happy medium is evolved that will place the medical student at least half way between the deficiencies of the old fashioned apprentice plan, and the superfluities of our over-theorizing and ultra-expensive current system of medical didactics, the present top-heavy scheme is doomed to certain demolition.

As matters are arranged now, it takes a man so long to get ready to practice medicine that he is worn out both financially and enthusiastically before he ever places his finger independently on his first patient's pulse. There is so much text book and laboratory knowledge fed to the embryo doctor that he loses sight of the human element. After all it is what a doctor can do for his patient and not what text books and research hours can do for the doctor that is the basis of the healing art. What does it avail a man if the knowledge of the Infinite be his, provided he lacks the facilities for passing on this knowledge to the benefit of mankind? A man does not learn people from books. The exception is the proven rule with the human element. A doctor who clings to his books and forgets the citizenry is like the desert rat learning to swim from a chart and in the depths of shifting sand.

Pure joy of discovery is a pleasure not to be denied the true student of the human body, its ails and ills and faculties. But the selfishness of personal perfection in a man's chosen line should be made to yield some tithe of its debt to a mortal world, through the pleasure of service to humanity.

This service is not all in the great hospitals, nor in the crowded cities where a man presses a button for his hot water and turns a lever for his heat. Out in the backwoods districts where presidential elections have been swayed and carried more than once, dwells a large percentage of the protein elements of our nation. Men, women, children need medical care in those far away places. And just now, unless all statistics belie themselves, that is the one thing they are not receiving.

The reason is duofold and retroactive. It costs so much now for a man to acquire a medical education that he can not, in the light of self-preservation, afford to bury himself among the poor and in the wilderness. Then, too, all the gold plate and fine porcelain of the appurtenances of modern medical schools have their insidiously softening effect upon the men and women who enroll in these institutions. There is none of the old fashioned apprentice system when the "student doctor" went along into the heart of the mountains at break of day, aided in an accouchement by doing tasks in some obscure mountain cabin at which the overtrained nurse of today would shrug her shoulders, split the firewood, sobered up "the old man" if necessary, and snatched at what scraps of knowledge he could, both from watching his senior and from the abridged medical libraries of the time.

For medicine as a science, the gold studded schools have been fairy godmothers. For medical men, these institutions hold the same trespass as the old adage, "Beware of Greeks bearing gifts." For all this silk and fine linen, for all this knowledge doubly distilled and ever increasing in poignancy, medical men are paying with

much of their professional virility. One can quote appropriately the poet

"Ill fares the land to hastening ills a prey,
Where wealth accumulates and men decay."

The didactic method of teaching medicine can not be dispensed with. But it must be leavened by the stimulative method. To revert again to poetry, "The proper study of mankind is man." There must be quick and effective steps taken to revolutionize the current system of medical education, and to relieve the shortage of doctors for the middle class people in middle class communities or the science of Medicine in America will find itself bankrupt of men and cast out by those whom it would serve.

A comprehensive programme must be evolved where a fluidity of curriculum, a shrinking of expense and an appreciable reduction in the time of preparation will send forth to serve and to heal a number of practicable working physicians to supplement the thousands of skilled specialists, neither available nor necessary to at least sixty percent of the country's medical needs.

DEFECTS OF MEDICAL EDUCATION. OUR PRESENT SYSTEM IS TOPHEAVY AND IMPRACTICAL AND IS NOT PRODUCING RESULTS DESIRED

Critics of the current system of medical education take much comfort from recent words of Dr. Lyman Wilbur before the Cincinnati College of Medicine. The doctor's words will bear reprinting not once, but many times. It is significant when from the president of the A. M. A. emanates this statement:

"We need to smash the present curriculum and revamp it to bring it up to the medical requirements of modern knowledge. Pre-medical courses should be reconstructed. Present courses are in some ways ridiculous. We now take twenty-five years of the life of the best young men in the country preparing them to become physicians. We standardize the work so that they are all alike. We prescribe that they shall have so many hours of this and so many hours of that. What we need is to make courses more elastic and elective, so that men who are philosophers, chemists or psychologists, may enter the profession and bring with them their different viewpoints. The science of medicine is changing and we cannot dam the stream at one point and prescribe certain things."

In view of Dr. Wilbur's remarks it is well to reconsider that the London Lancet only a year or so ago stated that a "young man has no right to enter upon the study of medicine unless he has an investment of $75,000." Those figures were meant for England, but in this respect the United States has no bargain rate. It is assumed long since that to get the right sort of a medical education in the United States today, a young man must make up his mind that it will cost him at least $40,000 at the outset and the heart of his vital years.

It was not from such men that the pioneers were recruited who built up medicine in the United States from sporadic insufficiency to the apotheosis of all that is best in research and in dispensing.

A physician must be a psychologist as well as a craftsman and scientist. Such men are born, not made, and cannot be culled like college freshmen from homes of wealth and distinction alone. A doctor without that love for his work that lends him to sacrifice himself to the ultimate degree . . . the sine qua non of medical efficiency to the strictest ruling . . . may be a good technician through careful training, but in the actual sense of the work, he is more or less of a failure.

Just what levers must be applied to current educational systems to effect an equilibrium, cannot be chosen in haste. But the hour cannot be delayed, for following out Dr. Wilbur's far seeing advice. One way out might be to make the study of medicine an endowed labor, as is the way with the priesthood to a certain extent. Until such a millennium can prevail, modern medical educators must manage to make friends with the Mammon of iniquity and whip into shape the elements that are in their hands. A shortening of the preparatory period, made possible by an extension of secondary education, both in the grammar and high schools will be a long step in advance. Much work done in the colleges now could be done to advantage in the high schools, just as the grade schools could care for some of the high school tasks, if this work were undertaken with a definite end in view. There would be economy all along the line. A year of a man's wage earning life is a dead loss to him, if it must be spent in preparation instead of

production. There is a way out and it can be found and must if medical education is to progress instead of stagnate or retrogress.

ILLINOIS STATE MEDICAL SOCIETY

PRELIMINARY PROGRAM

SEVENTY-FIFTH ANNUAL MEETING

Quincy, May 19, 20, 21, 1925

First Day—Tuesday Morning

9:00—Diagnostic and Demonstration Clinics of the Section on Eye, Ear, Nose and Throat, Chamber of Commerce.

First Day—Tuesday Afternoon

1:00—Call to order of each section for the reading and discussion of the papers of the program.

5:30—Adjournment for dinner.

First Day—Tuesday Evening

7:30—Call to order of the Society in General Session by the President, L. C. Taylor, Springfield, Elks Club Auditorium.

Invocation.

Address of Welcome.

Report of the Chairman of the Committee on Arrangements.

9:00—Call to order of the House of Delegates by the President, L. C. Taylor, Elks Club Auditorium.

Second Day—Wednesday Morning

8:00—Call to order of the section for the continuation of the program.

12:00—Adjournment for lunch.

Second Day—Wednesday Afternoon

1:00—Election of officers in each Section.

1:30—President's Address, L. C. Taylor, President, Illinois State Medical Society, Springfield.

2:15—Oration in Medicine. "Hippocrates or Paracelsus." Charles P. Emerson, Indianapolis, Ind., Dean and Professor of Medicine, Indiana University School of Medicine.

3:15—Oration on Surgery. "Hyperthyroidism and Peptic Ulcer—An Analogy." George W. Crile, Cleveland, Ohio, Professor of Surgery, Western Reserve University School of Medicine.

Second Day—Wednesday Evening

6:00—Alumni Banquets.

7:30—Entertainment for Members and Guests by Local Arrangement Committee.

Third Day—Thursday Morning

8:00—Call to order of the House of Delegates for the Election of Officers, Chamber of Commerce.

8:00—SYMPOSIUMS:

1. Northwestern University Medical School.
   a. Dr. Sumner L. Koch, Study of the Treatment of Injuries to the Hand.
   b. Dr. Wm. R. Cubbins, Acute Intestinal Obstruction.
   c. Dr. Ralph B. Bettman, Surgery of Chest.

9:00—2. University of Illinois School of Medicine.
Subject: "Differential Diagnosis."
   a. The Abdomen. Edward Louis Heintz, Chicago.
   b. The Chest. Maurice Lewison, Chicago; Wm. J. Quigley, Chicago.

10:00—3. Loyola University School of Medicine.
Subject: "Goiter."
   a. Surgical Considerations. E. L. Moorehead, Chicago.
   b. Medical Considerations. Charles L. Mix, Chicago.
   c. Pathological Considerations. Lloyd Arnold, Chicago.

11:00—4. Rush Medical College.
Subject and Speakers to be announced.

12:00—Adjournment for lunch.

Third Day—Thursday Afternoon

1:30—Report of the House of Delegates, Elks Club Auditorium.

Induction of the President-Elect.

SECRETARIES' CONFERENCE.

W. C. Blaine, President, Tuscola.

J. S. Templeton, Secretary, Pinckneyville.

1. Why Jefferson County Has a 100% Membership—J. W. Hamilton, Secretary Jefferson County Society, Mt. Vernon.
   Discussion—E. W. Fiegenbaum, Edwardsville, Secretary Madison County Society.
2. Improving the Attendance and Interest in the County Society Meet-

ings—Ralph Graham, Monmouth, Secretary Warren County Society.
Discussion, R. R. Ferguson, Chicago, Secretary Chicago Medical Society.

3. The County Society, and County Secretary's Relation to the State Secretary—Wm. D. Chapman, Silvis, Ex-Secretary Illinois State Medical Society.
4. The Interests of the Medical Profession now before our State Legislature—J. R. Neal, Springfield, Chairman Legislative Committee.
5. What We Expect of the County Secretary the Coming Year—J. C. Krafft, Chicago, President-Elect Illinois State Medical Society.
6. The Secretaries' Conference in 1926—Harold Swanberg, Quincy,

SECTION ON MEDICINE

J. H. Hutton, Chairman, Chicago.
B. V. McClanahan, Secretary, Galesburg.

1. Fifty Years of Medical Progress—Chas. B. Johnson, Champaign.
2. Feeding the Normal Baby—F. Emerson Inks, Princeton.
Discussion opened by Dr. S. H. Kraft, Chicago.
3. Relation of Psychic Disturbances to Head Injuries—George W. Hall, Chicago.
Discussion opened by L. H. Sloan, Chicago, and C. G. Farnum, Chicago.
4. The Diagnosis of So-called Toxic, Adenoma and Exophthalmic Goiter—Wilbur L. Bowen, Peoria.
Discussion opened by J. K. P. Hawks, Bloomington.
5. Treatment of Scarlet Fever and Its Complications—Archibald Hoyne, Chicago.
Discussion opened by George Weaver, Chicago.
6. Oral Mycosis with Report of Case—Dudley W. Day, Rockford.
Discussion opened by John Tuite, Rockford.
7. Dangers and Safeguards of Alkali Treatment of Peptic Ulcers—L. C. Gatewood, Chicago.
Discussion opened by A. A. Goldsmith, Chicago.
8. Pyelitis of the New Born—Robert H. Graham, Aurora.
Discussion opened by James Wallace, Oak Park and G. L. Kaufman, Chicago.
9. Treatment of Gonorrhea—A. E. Mowry, Chicago.
Discussion opened by Damon Brown, Madison, Wis.
10. Alzheimer's Disease, with lantern slides—Frank Parsons Norbury, Jacksonville.
Discussion opened by Charles F. Read, Chicago.
11. Outlook for T. B. Patients—Henry C. Sweany, Chicago.
Discussion opened by Clarence Wheaton, Chicago.
12. The Ambulant Treatment of Hernia—G. A. McDonald, Fairfield.
Discussion opened by J. E. Dixon, Fairfield.
13. A Study of One Hundred and Twenty Male Epileptics—Thomas G. Hall and Charles F. Read, Chicago.
14. Child Hygiene, Edith B. Lowry, St. Charles.

SECTION ON SURGERY

Ben B. Baird, Chairman, Galesburg.
Philip H. Kreuscher, Secretary, Chicago

1. Some Phases of the Cancer Question—Carl E. Black, Jacksonville.
Discussion opened by Henry Schmitz, Chicago.
2. Intestinal Anastomosis From the Anatomical and Technical Standpoint—Walter J. Sullivan, Chicago.
Discussion opened by M. S. Griffith, Galesburg.
3. Traumatism of the Head—H. C. Mitchell, Carbondale.
Discussion opened by Wm. R. Cubbins, Chicago.
4. Prognosis of Intracranial Tumors—Loyal E. Davis, Chicago.
Discussion opened by Chas. P. Blair, Monmouth.
5. Plastic Repair of Defects of the Scalp—Everett P. Coleman, Canton.
Discussion opened by Carl Beck, Chicago.
6. Fractures of the Head of the Femur—Frederick Christopher, Chicago.
Discussion opened by Ralph McReynolds, Quincy.
7. Diaphragmatic Hernia—J. W. Dryer, Aurora.
Discussion opened by C. Matthews, Chicago.

8. Thrombo-Angiitis Obliterans—John D. Claridge, Chicago.
   Discussion opened by J. K. P. Hawks, Bloomington.
9. Fractures of the Neck of the Humerus—Clyde A. Finley, Galesburg.
   Discussion opened by S. C. Woldenburg, Chicago.
10. Some Practical Points in the Diagnosis and Treatment of Acute Pancreatitis—John A. Wolfer, Chicago.
    Discussion opened by Homer F. Moore, Rockford.
11. Reclaiming Hopeless Chest Cases; Presentation of Cases—Don Deal, Springfield.
    Discussion opened by Emil Beck, Chicago.
12. Pre-operative and Post-operative Treatment of Prostatic Adenomata—Frank M. Phifer, Chicago.
    Discussion opened by Ray Edgar Barrows, Cairo.

SECTION ON EYE, EAR, NOSE AND THROAT

W. R. Fringer, Chairman, Rockford
Chas. M. Robertson, Secretary, Chicago.

Diagnostic and Demonstration Clinics Tuesday, May 19, 1925.

9:00 A. M.

1. Nature and Causes of Disorders of Speech—Elmer L. Kenyon, Chicago.
2. The History of Spectacles—James E. Lebensohn, Chicago.
3. Glaucoma—Harry W. Woodruff, Joliet.

2:00 P. M.

4. Lesions of the Optic Chiasm—George F. Suker, Chicago.
5. Affections of the Ear in General Disease—George W. Boot, Chicago.
6. Surgical Treatment of Ethnoiditis—Harry L. Pollock, Chicago.

(The section banquet will be held at the Country Club Tuesday evening.)

SCIENTIFIC PROGRAM

1. Preventable Accidents in Cataract Operations—William A. Fisher, Chicago.
   Discussion opened by C. C. Clement, Chicago.
2. Is Malaria an Etiologic Factor in Iritis?—R. C. Matheny, Galesburg.
   Discussion opened by A. L. Adams, Jacksonville.
3. Cholesteotoma Involving the Ethmoidal Cells and the Antrum of Highmore—G. C. Otrich, Belleville.
4. Ludwig's Angina—C. F. Yerger, Chicago.
   Discussion opened by H. C. Ballenger, Chicago.
5. Defects in the Tone Scale, With Relation to Poor Spelling and Loss of Musical Tone—Frank L. Alloway, Champaign.
   Discussion opened by Dr. Thomas J. Carmody, Danville.
6. Observations of the Fundus in General Paralysis of the Insane Through Administration of Hyparsemid, and a Comparison With Neo-Salvarsan. (Preliminary Report)—J. H. Roth, Kankakee.
   Discussion opened by Solomon Jones, Danville.
7. Methods of Controlling Hemorrhage After Tonsillectomy—E. J. Nothenberg, Chicago.
   Discussion opened by Albert H. Andrews, Chicago.
8. Focal Infections, Successes and Failures—Edwin McGinnis, Chicago.
   Discussion opened by A. B. Middleton, Pontiac.
9. The Determination of Retinal Blood Pressure—James E. Lebensohn, Chicago.
   Discussion opened by George F. Suker, Chicago.
10. Sarcoma of the Orbit—G. S. Duntley, Macomb.
    Discussion opened by Walter Stevenson, Quincy.

SECTION ON PUBLIC HEALTH AND HYGIENE

D. J. Lynch, Chairman, Chicago.
C. H. Diehl, Secretary, Effingham.

1. Typhoid Fever Epidemic Evidently Due to Infected Oysters—C. T. Roome, Evanston.
   Discussion opened by S. S. Winner, Chicago.
2. Some Public Health Problems, Revealed by the Medical Histories of High School Graduates—J. Howard Beard, Urbana, University of Illinois, Health Officer.
3. Prevention of Goiter—E. P. Sloan, Bloomington.
4. The Responsibility of the Medical Profession to the Rising Generation—June L. Edmondson, Chicago.
5. Rural Water Supplies and Sewerage—Harry F. Ferguson, Springfield, Chief Sanitary Engineer, State of Illinois.

6. The Public Health Nurse as a Factor in Medical School Inspection—Mrs. Madge D. Reiseman, R. N., Chicago.
7. The County Health Unit—Thomas Parran, Jr., Springfield, U. S. Public Health Service.
   Discussion opened by C. E. Price, Robinson, Director of Crawford County Health Unit.
8. The Cancer Prevention Problem in Urology—Lewis Wine Bremerman, Chicago.
   Discussion opened by Walter C. Wilhelmj, East St. Louis.
9. Factors in the Reduction of Typhoid in the City of Chicago—John Dill Robertson, Chicago, Ex-Health Commissioner of Chicago.
10. Public Health Problems as Related to Mental Diseases—Chas. F. Read, Chicago.
11. Public Health Work as Viewed by One in General Practice the Last Quarter of a Century—Jas. S. Templeton, Pinckneyville.
    Discussion opened by Wm. E. Shastid, Pittsfield.
12. Public Health, and the Medical Profession in Illinois—H. N. Heflin, Kewanee.
    Discussion opened by L. O. Frech, Decatur.

A REAL HEALTH SHOW FOR THE PEOPLE—BY THE PROFESSION

Many Obstacles Overcome

Final Success Rests With Profession

The National Baby Congress and Health Exposition, sponsored and supervised by the Illinois State Medical Society, to be presented to the public May 2nd to 9th, in the American Exposition Palace, Chicago's new $10,000,000 exposition building, has progressed to the point where it is possible to say with assurance that it will be a distinct success, especially in its ethical, educational and entertainment aspects. The Medical Committee of Supervision confidently announces that it will be a "Health Show" that will meet the approval of the medical profession and the approbation of the public.

APPROVED COMMERCIAL EXHIBITS

Great care has been exercised in the admission of commercial exhibits, work in which the Committee of the Illinois State Medical Society has been accorded the cooperation of the Bureau of Investigation of the American Medical Association.

Elsewhere in this issue of the Journal will be found a list of approved commercial and professional concerns who will have displays in this exposition. This list will be considerably enlarged by the date of opening of the exposition.

Your Medical Committee of Supervision strongly commends these approved exhibitors and their products to the favorable consideration of all Illinois physicians. Their products are such as entitle them to admission to a strictly ethical health show and, therefore, subject to professional approval. The fact that they are participants in this exposition naturally implies professional endorsement of their products to the public.

EDUCATIONAL EXHIBITS

The educational exhibits contributed by governmental and extra-governmental health and welfare agencies will occupy, approximately, one-half of the available exhibit space and will include the displays of all organizations which may be classified as ethical and in friendly accord with the medical profession.

In this connection it is interesting to note that some of the less important *lay* health organizations have not been over-enthusiastic about "a health show run by the doctors," one or possibly two going so far as to attempt to throw obstacles in the way of its success. From the fact that these organizations depend entirely upon professional cooperation for successful functioning it is at once apparent that their attitude is not only one of bad faith, but also evidence of lack of foresight.

Among the several very important things which this Exposition will make clear is "who are and who are not real friends of the medical profession." This, your Medical Committee will make known to you in due season.

THE PROGRAM

This Exposition is designed to teach the people the ways of health. Being a show for the public it must be presented in such way as to have strong popular appeal and its lessons must be told in language that is readily understood by the layman.

The outstanding theme will be: "For long life and a happy one, keep the human machine in good working order." Naturally this implies

that personal health examinations for baby, youth and adult will be the thing most emphasized.

In order that this may be registered with the largest number in the most effective way, three great health contests, with valuable awards, have been arranged.

The Baby Health Contest, for children up to six years of age, has secured at this early date more than 3,000 entrants. With the facilities at our command, made possible through the cooperation of the Chicago Health Department, we are prepared to give upwards to 20,000 babies complete physical inspection.

The Youth Health Contest for children between the ages of six and eighteen years will be conducted along lines similar to the Baby Health Contest.

The Adult Health Contest, open to all over eighteen years of age, will be conducted with the same scrupulous attention to details. Results of examinations will be furnished and all will be urged to have their physician interpret the record to them. Advantage will be taken of the opportunity to impress the importance of periodic health examination.

All of this conforms with the cooperative program agreed to some months ago by the Illinois Manufacturers Association and the Illinois State Medical Society.

In addition there will be demonstrations of approved physical culture methods, life-saving, first aid and self defense; an "Outdoor Sports and Athletic Style Revue;" a "Carnival of Youth," featuring games, sports and play that contribute to the upbuilding of healthy youth; radio broadcasting of short health talks, moving pictures, etc., etc.

THE REAL TEST

All that remains to make this Exposition a genuine success is public attendance and your Committee is now bending all its energies in this direction. We must have your wholehearted cooperation in this respect; otherwise, our efforts to establish medical direction of "health shows" and "baby health contests" will prove futile.

It is *now* squarely up to the medical profession, which long has desired relief from the embarrassments and annoyances incident to political or lay directed health shows and baby conferences to come forward and assist in making this Exposition successful in every respect.

Will *you* do your part? We believe you will.

EXHIBITORS' DIRECTORY

National Baby Congress and Health Exposition

AMERICAN EXPOSITION PALACE, CHICAGO

May 2-9, 1925

Sponsored and Supervised by the Illinois State Medical Society

Enforcing Ethical and Scientific Standards of the American Medical Association

☛Your Committee on Medical Supervision recommends the following Exhibitors to the favorable consideration of physicians and the public generally:

Exhibitors Approved and Accepted to April 1, 1925

American Barley Sales Corporation: Distributors of Johnson's Pure Barley Flour for infant feeding and Cream of Barley, a breakfast cereal.

American Medical Association. Showing activities of the Association for education of the public. "HYGEIA" a monthly magazine of health for the laity. Bureau of Health and Public Instruction and Bureau of Investigation.

Barbee's Baby Scale Rental Bureau and Sales, 159 S. State St., Chicago, Telephone Central 5164. Reliable safety tray balance scales used for our rental service.

Borden Farm Products Co. of Illinois. Sole distributors in Chicago of Borden's "Selected Milk" which sets anew high standard for Chicago's milk supply.

Bowman Dairy Co., Distributors of milk, cream, butter, eggs and cottage cheese. For 50 years the leaders in quality. Select the best for yours!

Calumet, The World's Greatest Baking Powder. You need not be afraid to let the children have all the home-baked things they want if you use Calumet, because it is the purest of all leaveners.

Chicago District Ice Association, featuring the advantages of proper refrigeration, with ice, of foods in the home; particularly in relation to its maintenance of nourishing qualities of children's foods.

Chicago Medical Society Milk Commission, Certified milk is a clean, fresh, raw, safe milk for infants and invalids.

Chicago District Ice Cream Association.

Chicago Motor Coach Co. For clean, comfortable, healthful transportation to and from work ride atop a Motor Bus over Chicago's finest boulevards and through the city's most beautiful parks—it provides daily recreation.

Chicago Portrait Photographers, Photographs of your family and yourself are lasting memories. Have yours taken.

Chicago Wholesale Fish & Oyster Dealers As-

SOCIATION, exhibiting research data relative to food values of fish, oysters and seafoods.

CHIPPEWA SPRING WATER COMPANY, 527 Roosevelt Road, Distributors Chippewa Natural Spring Water, the Purest in the World; Chippewa Ginger Ale, Root Beer and Carbonated Water.

CHRISTIANSEN BROS. DAIRY CO., Where cleanliness is permanent. We invite your inspection. Learn why a bottle of safe milk is a bottle of health.

CONTINENTAL SCALE CO., Chicago. Health Scales. Your weight is an index to your health. Every well regulated home should have thoroughly dependable scales such as we make.

CORCORAN MANUFACTURING COMPANY, Cincinnati, O. Manufacturers of "Not-a-Toy." Health and Happiness for Baby, relief from care for Mother.

CORN PRODUCTS REFINING COMPANY, Manufacturers of Karo, Mazola, Argo, Kingsfords and Linit Starches.

CRANE CO., exhibiting a twice-fired vitreous lavatory, a dental lavatory, a baby's bath and a shower bath.

DAIRY DRINK CO., 2825 Lexington St., Chicago. Pure Wholesome milk contributes to health. It becomes more palatable and nutritious when combined with chocolate. Drink "D. D."

ERNEST MONNIER, INC., Boston, Mass. U. S. Agent for Ingram's Transparent Nipples.

EARNSHAW KNITTING COMPANY, "VANTA BABY GARMENTS," manufactured without pins or buttons, guaranteed non-shrinkable; unnecessary to turn baby to put on garments. Recommended by doctors, nurses and hospitals.

FOREST GLEN CREAMERY CO. A recipe for pink cheeks and sturdy little bodies. Give your youngsters Forest Glen Milk—Guaranteed Pure. 3737 Southport Ave. Lakeview 1158.

THE HOOVER COMPANY. Oldest and largest makers of electric cleaners. More than a million and a half satisfied users. Only "The Hoover Beats As It Sweeps As It Cleans."

HORLICK'S MALTED MILK CO., Racine, Wis. Will exhibit "Horlick's" the ORIGINAL Malted Milk for infants, invalids and convalescents. Also Horlick's Food, their maltose-dextrin milk modifier.

HYDROX CORPORATION. Main office and plant 24th St., at the Lake, Chicago. Manufacturers of Hydrox Ice Cream (purer because carbonated) and Hydrox Gingerale and other carbonated beverages.

ILLINOIS BELL TELEPHONE CO.

J. G. INGRAM & SON, London, England. Manufacturers of Ingram's Transparent Nipples, the standard all over the world. Ernest Monnier, Inc., Boston, Mass. United States agents.

THE JELL-O CO., INC., LeRoy, N. Y., Manufacturers of Jell-O and D-Zerta, (a jelly powder for diabetics). Both put up in commercial and institution packages.

JAS. S. KIRK & CO., Manufacturers of the famous "Jap Rose Health and Beauty Soap," Juvenile Baby Bath Castile, Green Soap for physicians and surgeons, and other fine toilet and household soaps.

J. L. KRAFT & BROS. CHEESE COMPANY. Manufacturers of Kraft Cheese in tins and in foil.

METROPOLITAN LIFE INSURANCE CO.

IRA J. MIX DAIRY COMPANY. Mix Mix's milk with your menu. From Country to You in Glass. Call Victory 1040.

NATIONAL MILK COMPANY. Distributors of high grade milk, cream and dairy products.

THE NON-PTOSIS SERVICE. Stands for better health and higher spirits. The support produced in any ptosis garment is a brace that has no equal.

NORTHWESTERN STEEL & IRON WORKS. Manufacturers of National Pressure Cookers. They save time and money and are endorsed by leading domestic science experts.

THE ORIGINAL ARCHAMBAULT method of French cleaning includes sterilization of garments which resists bacteria and promotes health. The health of civilized nations depends upon intelligent use of its advantages.

PELOUZE MANUFACTURING CO., 232 East Ohio Street, Chicago, Illinois. Manufacturers of Infant, Dietetic, Photographic, Household, Postal and Dairy Scales.

PREMIER SERVICE COMPANY. Manufacturers of Premier Duplex Vacuum Cleaners. Branches and service stations in principal cities. Cleans floors and rugs for baby's sake.

THE SANITARY DISTRICT OF CHICAGO, Working exhibit of sewage disposal plants in operation. General exhibit of the Sanitary District's activities. Rest Room.

SCHOENHOFEN COMPANY, Manufacturers of Edelweiss Light and Dark Beer (non-alcoholic), Edelweiss Tonic and Green River.

SETHNESS COMPANY, Chicago, Manufacturers of "Drinkmor," the appetizing hunger and thirst satisfying Dairy Drink. A scientific, dietetic preparation combining whole pasteurized milk, granulated cane sugar, pure barley malt and chocolate.

SIDNEY WANZER & SONS—Chicago's Pioneer Purveyors of Dairy Products—established 1857. Milk from inspected herds on carefully selected farms.

CHAS. A. STEVENS. Breeder of Fine Toggenburg Milk Goats, Exhibiting for Brook Hill Farm, producers of Brook Hill Certified Milk.

STANDARD CAP & SEAL CORP., Our Hood Seals protect your milk and cream from flies, fingers, dirt and germs. Hood Sealed Milk is cleaner, richer, sweeter milk.

STOVER CO., Distributors of "Frigidaire" electric refrigeration.

WIELAND DAIRY CO., Distributors of Milk, Cream, Butter, Eggs and Cottage Cheese. From country to you in glass. For health's sake, use Wieland's.

A POME

Here lies my wife, Samantha Proctor,
Who ketched a cold but would not doctor.
She couldn't stay, she had to go—
Praise God from Whom all blessings flow.

—*Mascot.*

Mac—I'm smoking a terrible lot of cigars lately!
Jack—You certainly are, if that's one of them!—*Columbia Jester.*

SOLVING THE NURSE PROBLEM

Medical Society of the County of Erie, New York

REPORT OF COMMITTEE ON NURSE QUESTION

SUBMITTED TO AND ADOPTED BY THE MEDICAL SOCIETY OF THE COUNTY OF ERIE AT ITS REGULAR MEETING, MARCH 16, 1925

To the President and Members of the Society:

After careful consideration of the various factors entering into the so-called nurse situation as it exists today in Erie County, and throughout the State of New York as well, your Committee desires to submit this report, covering the following points:

1. What, if any, are the just grounds for criticism of the present status of the registered nurse with relation to the public and to the physician?

2. What are the underlying causes of the unsatisfactory conditions that we find not only evident but increasingly prevalent?

3. What definite remedies can we recommend to relieve the situation?

I—GROUNDS FOR CRITICISM

1. *Scarcity of Nurses.* Evidence of the claim that there are insufficient nurses to supply the demands of the sick public is presented so frequently both by physicians and laymen requiring nursing service as to thoroughly substantiate the claim in the minds of the Committee. This more or less constant shortage becomes acute during epidemics or seasonal illness.

2. *Nursing in Private Homes.* Testimony of physicians and laymen is abundant evidence of the increasing unwillingness of a large number of Registered Nurses to accept calls to nurse in private homes.

3. *The Twelve-Hour Schedule.* Your Committee realizes that there are valid arguments advanced on both sides of the question of limiting the nurse's time on duty to 12 hours. Without entering into a discussion of the merits of this question your Committee is convinced that one result of this schedule is to work a great financial hardship on the sick public, the great majority of whom are unable to meet the expense involved.

Especially burdensome is this system on maternity patients. Your Committee believes that the great increase in expense for nursing in these cases tends to make it almost prohibitive for people of moderate means to accept parenthood, and so constitutes a serious menace to the birth rate among the very class in which a high birth rate is most desirable.

4. Your Committee finds evidence of an increasing tendency on the part of some Registered Nurses to exercise the functions of a physician rather than a nurse in their relations with patients. While we believe that this by no means holds as a criticism of any but a minority of nurses of today, we are impressed with the apparent growth of this attitude of mind on the part of many nurses.

II—UNDERLYING CAUSES OF CONDITIONS CRITICISED

1. An increasingly large number of nurses are being drawn into special lines of work other than bedside care of the sick—such as Industrial dispensaries, public health nursing, institutional positions, etc.

2. Under the present system of training, emphasis is laid on the larger sphere of the professional woman. While your Committee would be the last to depreciate the expansion of any woman's sphere of usefulness, the practical fact remains that such aspirations on the part of nurses seem to result in a diminished enthusiasm for the performance of the real function of a nurse, viz., caring for the comfort of her patient and executing the orders of the physician.

3. The expanding curriculum further serves to educate nurses beyond the point of practical usefulness in their actual work, engendering in many the desire to exercise the function of one who treats the patient rather than one who cares for the ailing. In other words such nurses are not content, on the one hand, to play true their roles of the physician's representative on the case, and, on the other hand, many of them are misled into thinking that the general smattering of medical education which they receive renders them competent to practice medicine rather than nursing.

4. The present high requirements as to preliminary education of a pupil nurse, viz., a high school course, together with a three years course of hospital training, makes for dissatisfaction with the financial returns on the investment of time and money necessary to secure such training.

5. The preliminary high school course requirement serves to debar many young women of high character and ability such as formerly chose nursing as a calling from sheer love of the work. The number of applicants for training is thus greatly limited, with the resultant scarcity of women in the nursing ranks.

III—SUGGESTED REMEDIES

1. Your Committee unhesitatingly recommends reducing the preliminary requirements of applicants for nurse training to a grammar school education—placing emphasis more on character, ability and enthusiasm of the applicant for this special field of work.

2. We would modify the curriculum in training schools so as to require two years of practical bedside training, limiting didactic instruction to the elements of anatomy, physiology, disease causation, modes of infection, practical asepsis, etc.

3. We advocate granting a diploma at the end of the second year, graduating the pupil as a Qualified Nurse, with the privilege of registering and using the degree of R. Q. N.—Registered Qualified Nurse.

The idea of creating the class of Qualified Nurses is to clear the curriculum of useless advanced scientific specialties, to shorten the unnecessarily long period of training and to readjust the education to the necessities of medical and surgical practice.

4. We would arrange the curriculum for a third

year of training for those who so elect—consisting of more advanced work in those studies necessary to prepare them for public health nursing, institutional work and other activities than actual bedside care of the sick. At the end of the third year, according to this plan, a diploma might be granted as Master Nurse, with the privilege of registering with the Regents and using the degree of R. M. N.—Registered Master Nurse.

To be eligible for this advanced degree the applicant must have had a High School Education. Her first two years of training would be the same as that of applicants for a diploma as Qualified Nurse, but her third year would be advanced technical, administrative or specialty courses, as the candidate for the degree might elect.

5. As a concrete suggestion of how this general plan might be carried out your committee submits the following tentative curriculum, giving in one column the hours now required in the various subjects taught, and in a second column the suggested changes to be made.

SUGGESTED CHANGES IN NURSING SCHOOL CURRICULUM, WITH PRESENT PRESCRIBED HOURS

1ST YEAR

1st Semester.	Prescribed	Suggested
Anatomy and Physiology	48	36
Bacteriology	16	4
Personal Hygiene	8	6
Chemistry	16	4
Nutrition and Cookery	24	24
Hospital Housekeeping	8	8
Drugs and Solutions	16	6
Elementary Nursing	64	64
Historical, Ethical and Social Basis of Nursing	..	..
Introduction to Private Nursing.	8	3
	208 h. (12 h. per week)	155 h. (Save 53 h. (9 h. per week)
2nd Semester.		
Elements Pathology	8	6
Advanced Nursing	32	24
Materia Medica and Therapeutics	16	8
Diet in Disease	8	6
Ethics	8	0 Given above
Massage	0	8
	72 h. (5 h. per week)	52 h. (Save 20 h. (3¼ h. per week)

2ND YEAR—JUNIOR

1st Semester.		
Nursing in General—Medical Diseases	16	16
Nursing in General—Surgical Diseases	16	16
Nursing in General—Infant Feeding	16	8
	48 h.	40 h. (Save 8 h.
Gynecological Nursing	0	0
2nd Semester.		
Nursing in Communicable Diseases.	8	8
Operating Room Technique	8	8
Obstetrical Nursing	16	16
Eye, Ear, Nose and Throat Nursing	8	2
Public Sanitation	8	2
	48 h. (3½ h. per week)	36 h (2½ h. per week)

This saves about 97 hours in the first two years. To replace some of these unnecessary hours there could be added some of the practical 3rd year work, e. g.,

Emergency Nursing and First aid.	8	8
Occupational, Skin and Venereal Diseases	8	4
Hydrotherapy, etc., etc., etc.	8	8

3RD YEAR—SENIOR

(Two or three of the courses of the third year could be added to the second year to meet special conditions in training a Registered Qualified Nurse.)

The pupil wishing to take a third year leading to the degree of Registered Master Nurse might be allowed an elective course, choosing her subjects from some such list as the following, according to her individual leaning toward some special line of work.

1. Nervous and Mental Diseases.
2. Occupational Therapy.
3. Administration Problems.
4. Laboratory Technique.
5. Anaesthesia.
6. Modern Social Conditions.
7. Field Work, Social Service Work, Public Welfare Work.
8. Tuberculosis Nursing.
9. Nursing Mentally Defective Children.
10. Gynecological Nursing.
11. Obstetrical Nursing.
12. Psychology, etc., etc., etc.

Finally, your committee wishes to disclaim any idea of personal criticism of any or all Registered Nurses now practising their noble profession. The criticisms herein contained are directed only at the present system of nurse-training, for which ill-judged system no responsibility or blame can attach to those who have been trained under its administration.

The whole matter can be reduced to very simple terms. WHAT IS THE AIM OF NURSE TRAINING? Is it to train nurses, as the term implies,—that is, women whose first and chief mission is to care for the man, woman or child who is sick and in need of her care? Or is the aim to impart in a most superficial manner a quasi medical education which is utterly insufficient to qualify its recipient for medical practice, but serves only to weary their brains with a mass of undigested medical facts?

Should not nurse-training strive mainly to develop the pupil's powers of intelligent observation, to inculate a sense of responsibility for the execution of the physician's orders, and, last but not least, develop to the highest degree her skill in ministering to the sick?

Your committee believes that it should.

Respectfully submitted,

COMMITTEE ON NURSE QUESTION,
GEORGE R. CRITCHLOW, A.B., M.D., F.A.C.S., Chairman,
THEW WRIGHT, A.B., M.D., F.A.C.S.,
IRVING M. SNOW, M.D.,
DEWITT H. SHERMAN, A.B., M.D.,
JAMES A. GARDNER, M.D., F.A.C.S.,
EARL P. LOTHROP, A.B., M.D., F.A.C.S.

DISTRICT OF COLUMBIA GETS DISEASE CONTROL LAW

After five years of legislative history the venereal disease control bill for the District of Columbia was signed by the President on February 26. In spite of the fact that the bill has been on the verge of enactment at several times in the past, it did not become law until the closing days of the last session of the 68th Congress, although every state in the Union has had some sort of a venereal disease control measure since 1921. The fact that sentiment for the Gilbert Bill persisted for so long a time in the face of repeated legislative delays goes to show that the need for such a measure was keenly felt by residents of the District.

Under the provisions of the law, the chief officer of every hospital, dispensary, sanatarium and penal institution must report to the health department cases of venereal disease as soon as they are discovered. The judges of the juvenile and criminal courts must report any persons appearing before them who are suspected of being venereally infected. Private physicians are required to make a similar report within ten days after a case has come under their control. The District law provides that these reports be kept confidential by the health officer and his agents. According to the Division of Venereal Diseases of the United States Public Health Service, all of the states now have regulations requiring such reporting of cases of venereal disease.

In common with the regulations of thirty-five states, the District act provides that prostitutes, keepers of disorderly houses and persons convicted of any sexual crime are presumed to be a source of infection and are subject to examination. The health officer is required to employ for the protection of public health all such regulatory measures as may be necessary to prevent the spread of these diseases. He is also required to use every available means to ascertain the existence of venereal disease and the source of the infection. Persons against whom there is no criminal charge, but who are reasonably suspected of being infected, may be examined by the health officer upon consent of the parties. If, however, such persons withhold consent, an examination may be ordered by the court. A violation of such an order by continued refusal is punishable as contempt of court. In forty-three of the states the health officer is given express power to quarantine persons known to be infected with venereal disease. Nine of these states go even further, allowing the officer to placard the premises under certain conditions.

Twenty-nine states have laws which prohibit the advertising of preparations for the treatment of venereal disease in lay publications, or which prevent the sale of such medicine to a lay person except on the prescription of a licensed physician. A like clause exists in the District law. Nineteen states have found it advisable to regulate the employment of the venereally diseased, and in the District of Columbia the law prohibits persons suffering from venereal disease, in a form likely to be a source of infection to others, from being employed as barbers, masseurs, cooks, bakers or other producers or handlers of food or drink or from working in any other occupation in which the disease might endanger the public health.

Under the new law, it is compulsory upon physicians to advise their patients as to measures which they should take to prevent the spread of these diseases. They are also required to report all of the indigent cases which may come to their notice. The board of health is under obligation to take care of such cases and to see that they are given the proper treatment according to approved standards. Practically all of the states have some way of taking care of such indigent cases.—*U. S. P. H. S. Bulletin.*

THE BEST WAY TO RID THE LAND OF QUACKS IS TO REPLACE CHARLATANS WITH PHYSICIANS

One of the best methods of ridding the country of the curse of quacks and charlatans as prevalent and persistent as "pusley", will be to use the time-honored remedy of fighting fire with fire. One good, reliable, old-fashioned doctor set down in the highways and byways where now reputable psysicians are scarce as the proverbial hen's teeth, can do more to rout the fakes than tons of propaganda. A man has to take what he can get. If he can't get a doctor, he employs a charlatan or a mail-order nostrum. This vicious circle is easily transformed into a halo of light and healing. Today's cry from Macedonia is "Give us doctors." This can be done only when the supply is augmented by a corps of capable general men to replace the rapidly disappearing "family practitioner." Such capable general men cannot be produced until the expense of medical education is cut drastically. For the highly skilled specialists, who are needed as much as the general men, though not in such numbers, this cut may not be feasible. But every sick citizen is not in need of a hospital, an anesthetic or a savant. Some clean, simple old-fashioned doctoring is about all that the average man requires about three or four times a year. He is in too much awe as a rule to seek this from the savant, and probably would stagger through a multitude of expensive tests, that would swamp him in his search for a cure for, well let us say a felon. When he can't find a plain physician the average man takes to the charlatan. The route of the remedial trail is evident. Who will be the first to blaze it? What school will first see the light to the enduring benefit of the practice of medicine and those whom this profession serves?

DOCTORS CANNOT AFFORD TO REMAIN OUTSIDE THE ORGANIZATION

It is difficult to imagine how a physician can desire to remain outside of organized medicine. The advantages of membership are many and the expense is trifling. In some States, membership in the county, state, national organizations can be obtained for not more than $1.00 a month, and the disinterested observer would presume that every physician would be anxious to better his professional standing in a community by belonging to the proper organizations, even if for nothing else than for the protection of his professional standards. It should be regarded as good insurance with premiums at a very low cost.

Why should the individual physician belong to his county, state and national medical organizations? We present six answers to this question, each of which, we believe, is sufficient to cause a man to make the investment which would enable him to become definitely identified with the very best there is in the medical profession:

1. To have a part in organized effort for the promotion of the science and art of medicine and the betterment of public health.

2. To take advantage of opportunities offered in the medical society for individual scientific improvement.

MORE BUREAUCRATIC PROPAGANDA—CHILD LABOR AMENDMENT

The attempt to amend the Constitution of the United States for the purpose of invading American homes and controlling the child is another effort on the part of propagandists to fasten upon the people all the baneful results attendent upon bureaucratic policies. Miss Julia Lathrop, who is actively engaged in propaganda work and whose efforts may be questioned, recently appeared before the Grand Rapids Rotary Club sponsoring the enactment of the proposed amendment. At a subsequent meeting of the club one of the editorial writers of the Press, Mr. Woodruff, replied to her argument. Inasmuch as the subject is one of interest to the profession we are grateful for being able to publish this reply which is as follows:

Perhaps there is no better introduction to the subject than to recall that Miss Lathrop, a highly educated, most intelligent and shrewd advocate, stood upon this platform three weeks ago and appeared before another local audience the same night in the defense of the proposed twentieth amendment, emphasizing that it was in no sense a Bolshevist measure, that it had the support of a long list of women's clubs and the American Federation of Labor, that it was the logical successor to two child labor acts declared unconstitutional by the supreme court, and that it was the sort of change the fathers of the Constitution hoped we, their heirs and successors, would make when their imperfect document came down to us.

It is one of the oldest devices of debaters to concentrate upon the weakest points of the opposition. Miss Lathrop rang all the changes upon the charge, made in the course of the recent referendum campaign in Massachusetts, that this was a "Red" or "Radical" or "Socialist" measure. In the heat of a campaign and for the political effect of catchwords many points are made which would not be offered quietly in reasonable discussion. Miss Lathrop is absolutely right in her contention that the child labor amendment is under no conviction of "Radicalism" merely because Mrs. Florence Kelly, its initiator, was once married to a person of Russian extraction. Neither is it necessarily "Radical" because Victor Berger happened to like it; nor because Owen Lovejoy, head of the National Child Labor committee, happened to be a friend of Gene Debs.

In fact, it is a waste of time even to call it "Socialistic." Issues must stand on their own feet in intelligent discussion, not be thrown out or accepted because of some party tag attached to them. If we were to catalogue all the reforms throughout recent American political history which had the platform support of the Socialist party we should not know where to call a halt. For a few examples, there are the women's suffrage amendment, higher income and inheritance taxes, workingmen's compensation, factory safety inspection, and federal waterpower control. Moreover, if the grant of power contained in the twentieth amendment—the power to limit, regulate and prohibit the labor of persons under eighteen years of age—is in itself Socialistic, then obviously every state in the Union has a constitution honeycombed with Socialism. *For there is not a state without the power, at this very day, to limit, regulate and prohibit the labor of minors all the way up to twenty-one.*

However, it is absolutely unnecessary to tar the proposed twentieth amendment with the pitch of Socialism in order to condemn it in the minds of any American devoted to the historic traditions of this nation. In the first place, it is being borne in upon our federal union as time goes on and government pries increasingly into business that federal or centralized regulation of private life should be substituted for state and local regulation only in the face of the most obvious and overwhelming necessity. I shall attempt to demonstrate to this fact, and then to show that the child labor amendment is offered in answer to no such vital public demand, that its evils one by one are being met, and that as a matter of fact it is of that particular type of proprietary interference which least well adapts itself to federal control. In short, that there is no call for us to make an exception to the rule of keeping the national government in its own sphere and the states in theirs.

Miss Lathrop was particularly careful to point out that the constitutional fathers, as proof that they thought their Constitution needed amendment, changed it themselves no less than ten times in the first session of congress. *But Miss Lathrop was equally careful to overlook the fact that every one of these first ten amendments sought to protect the average American citizen against precisely the sort of regulation from Washington that the child labor amendment would permit.* Each of the ten secured the individual in the free exercise of his conscience and his opinions, or in

the conduct of his private pursuit of wealth and happiness, or in the regulation of his family. *He was guarded by them against undue searches, seizures, quarterings, religious persecutions, fines, imprisonments, confiscations and the like; and, finally, assured that whatever was done outside the functions strictly reserved to congress would be done by his own state, and by neighbors closely enough acquainted with conditions so that he would be reasonably sure of just and sensible treatment. The police powers of the nation, in other words, were reserved to the states.*

When we break into this reserved sphere of state action with a federal police statute, we substitute a distant, vague authority, largely and necessarily unacquainted with local conditions, for a state authority which has lived with and exercised police power over those conditions and whose enforcing officers are locally known and respected. We put in the hands of a great bureau at Washington powers and duties too large and intricate by far to be properly executed—and duties which often will not be executed where local sentiment objects to their application. As one writer has put it, "The government at Washington cannot successfully reach into the localities and enforce a legal standard of personal living which the bulk of the people of that locality do not support." Moreover, this action undermines that sense of local responsibility upon which the character and vitality of American democracy has always rested. The political body needs just as much exercise as the physical.

When Chief Justice William Howard Taft delivered the supreme court opinion declaring the second congressional child labor law unconstitutional he made the significant statement: "In the maintenance of local self-government, on the one hand, and the national power, on the other, our country has been able to endure and prosper for nearly a century and a half." The reminder that a just balance between these coordinate agencies, the nation and the state, is necessary to our national welfare *is most decidedly needed in these days when every reformer is running to congress to get a law, a policeman and a club.*

Only last month President Coolidge remarked: "The efficiency of federal operations is impaired as their scope is unduly enlarged. The efficiency of state governments is impaired as they relinquish and turn over to the federal government responsibilities which are rightfully theirs."

If we accept, then, as a fact the statement that regulation of local affairs from Washington is unwise except in cases of the most pressing necessity, can we say that the need of a child labor amendment is of this exceptional type?

Let us admit, if you will, that there are some 185,000 persons under 16 in the United States engaged in industrial employment—some of them in noninjurious occupations to be sure, out of school hours and only part time, some of them cases where further schooling is futile and a sensible manual apprenticeship the best possible education. Let us admit that in a proportion of these cases the state is to blame, health suffers, and children are actually in some danger from which it might seem the states had fallen down on the job. And then let us turn back the leaves of the calendar twelve years, and consider a compilation recently made of the contrasts between child labor legislation then and today.

In 1912, only twenty-one states prohibited the labor of children under fourteen in factories and stores. Today forty-five states or all but three, prohibit it. In 1912 only twenty-one states prohibited the labor of children under sixteen in dangerous trades. Today nearly all states prohibit it, and many rise above that standard. States limiting the industrial work of children to eight hours a day have doubled in numbers. There are now thirty-one such states. All but five states now have some prohibition of night work. The educational requirement has been raised in many states, and nearly all have some educational minimum. Ten years ago less than half the states had a physical test to determine whether children might work. All but nine have it today. Ten years ago only six states required a physician to pass on a child's fitness to work. Today twenty-two states require it.

We may be reasonably certain that progress as marked as this will continue; that states will continue to be shamed and persuaded into meeting the genuine evils of child labor for themselves. The amendment might and might not speed the time when the few backward states would come up and toe the mark. In exchange for this brief setting forward of anti-child-labor effectiveness, actually required in any pressing sense in only three states of the Union, all the *states together would be subjected to the inroads of that particularly exasperating and unreasonable species of trouble maker, the* federal investigator; a bureau at Washington would put a building and expand its officers, hire statisticians and add to the cost of government; another batch of pestiferous little cases would be dumped on the federal courts, whose dockets are already clogged with a mass of prohibition cases rendering the administration of substantial justice in important matters almost impossible. Meantime, with the removal of the sources of income from destitute families, from widows unable to find work and from children in states possessing no equipment to keep them in school until the age of sixteen, new responsibilities might be expected to crowd upon the federal government. The dole and subsidy system to pension mothers and provide standard schools, would be a more or less natural demand. *Federal scholarships and federal regulation of education are the next step. If we wish to be sure not to reach this extravagant and costly stage, we had better not take the first.*

As it is not only feasible, but in accord with American constitutional tradition to leave police activities to the states, why let ourselves in for a further federal usurpation of these activities? *In the long run is not the cure worse than the evil we desire to eradicate?* And would not a little time cure it anyway? That is the question I would leave with you.

It is an easy matter for advocates like Miss Lathrop to stand upon a platform and laugh away the suggestion that congress might go to all the excesses per-

mitted by this blanket amendment, or even to avail itself of any considerable part of them. But it is not so easy to find ground for this confidence in the actual record of congress.

Congress when legislating in such matters is peculiarly the prey of the half-baked reformer, the easy meat of the forceful minority. It sits apart from our daily life, and no such watch and ward attends its daily action as is vigilantly turned upon every movement of a state legislature. *When it was determined that congress possessed the constitutional right to assess income taxes, no one in his right mind would have supposed that in the space of a few years congress would interpret this permission to justify the spreading of a man's business secrets before his social peers and business competitors by means of the publicity of returns. Yet the thing has happened.* In the face of congress' actual record Miss Lathrop's childlike trust in its temperance and self control is sanguine to say the least.

There is only one *path of safety and of* political wisdom—*the path which will spare congress even the temptation.* In the long run the cure proposed would be more of a burden than the evil we wish to eradicate. And their progress of recent years offers ample ground for the belief that child labor will be brought by the states within its proper limits without the assistance of a long arm stretched from Washington to do their work for them.—*J. M. S. M. S.*, Feb., 1925.

SOMETHING IS FUNDAMENTALLY THE MATTER WITH THE NATIONAL DRIVE FOR THE CHILD LABOR LAW

William A. McKeever, A.M., LL.D., in January 24, 1925, issue of the *Dearborn Independent* has the following relative to the Child Labor Amendment:

After more than a quarter-century of experience as an educator, I am free to say that there is something fundamentally the matter with the national drive for the child labor law.

Unfortunately there is connected with it a sentiment of mushy mollycoddlism and *a threat of national ennui.*

What we need today far more is *a national movement for teaching all the growing young to work*—not to produce money, or goods, or gain, but character.

The typical high school age of today is a generation of soft, "baby beef" physically—under-exercised, under-muscled and over-fatigued by poison toxins which percolate into the tissues of their soft, loose flesh.

They deserve a better fate at our hands.

But instead of giving the physical development, the training in common industry which their growing bodies require, we head them in the opposite direction.

We are teaching them to loaf and to regard it a national crime for anyone to ask them to work.

The ability to work with the hands and the whole body is one of the God-given prerogatives *of the young.* Experience in the great trunk-line industries, such as producing food from the soil, manufacturing as an amateur, handling and transporting goods, bartering in the common materials of business traffic—that is what every growing boy and girl in America needs today far more than they need *national laws to keep them from learning to work.*

If any reader of this article can do anything worth while, or see America as fundamentally a nation of industry and sacrifice and unselfish co-operation, then I know that that reader's early career was one of training in the performance of common work.

You cannot break a boy to work after he is sixteen and make him like it. You cannot even season and strengthen the fiber of his body so that he can endure work happily and resist fatigue, if you permit him to reach sixteen as an undeveloped idler. His spongy tissues will carry constantly an over-amount of poison toxins. He will dread common work. He will regard it as an interference with his rights! He will look for a soft berth, for graft, for something for nothing. He will look upon schooling, as so many of our young do today, as a system that is successful only as it enables one to get by without work.

Mark you, *I am unalterably opposed to commercialized child labor; so is everybody else.* What we need is *a national child labor committee that will teach all children to work exactly enough to meet the suffering requirements of character development.* Children need to be taught to work for the sake of their health and happiness and self-reliance. They need to learn to work with their hands to experience that delightful sense of belonging to common humanity.

Not sixteen, but six, is the right age to begin to teach a child to work. We need a schedule of such training. I made one of this kind, and I hope soon to attempt a better.

A six-year-old should work about ten minutes a day.

A sixteen-year-old should work four to eight hours at common labor during the vacation of three months, and about two hours a day during the nine school months. Such an arrangement for all children alike would in a generation or two give us a new race of Americans in fiber resembling the pioneers who planted the nation.

America is destined to stand or fall in proportion as she stakes her future on the inheritances latent in the ordinary child of the common parenthood. God will continue to send us a few geniuses—a sprinkling of Lincolns, Edisons, and so on—and these will continue to be born among the lowly and work their way to the front. But it is the great body of ordinary children, reared in ordinary homes, who learn early to endure some privations, who rise from their beds fresh and alert at morning and become inured to a reasonable amount of industry.

We have more children today who are retarded industrially than are retarded intellectually. We have a generation of city sixteen-year-olds who are not more than six in their knowledge and ability to work with their hands.

I wish it were practicable to make every sixteen-year-old boy in the land a present of a cord of hardwood and a brand new ax, with the arrangement that he should cut the wood into stove lengths. I would

tie wood-sawing up with his parties, his picnics, his music, his merriment, his girls, in such a manner that he would swallow the whole dose as a delightful mixture. Then, in due time, he would have in his make-up the three youthful "graces"—

Mind, Muscle and Manhood.

LET FATHERS AND MOTHERS BE HEARD

The Twentieth Amendment to the Constitution Manifestly a Soviet Measure. Should 2,316 Persons Be Able to Change the Constitution of This Country?

Iredell Meares of the North Carolina and District of Columbia bars.

In the January 24, 1925, issue of the *Dearborn Independent is quoted as follows*:

It is the declaration of the constitution of North Carolina that "a frequent recurrence to fundamental principles is essential to preserve the blessings of liberty."

Similar declarations will be found in the bill of rights and constitutions of the several states, in principle, if not in language, and in the Virginia Declaration of Rights, which antedated them. The recent discussion about the Constitution, amendments thereto, and the Federal courts has conduced to a better understanding and wider knowledge of the fundamental bases upon which rest our governments, both state and national, and it is to be welcomed, whatever the contrariety of opinions that may have been expressed.

Only recently the statement was made by a prominent lawyer of New York that the Constitution of the United States does not prescribe any provision for a referendum to the people on the question of any amendment to that instrument. It is true that it does not so prescribe by way of a popular vote of the mass of the American electors, voting individually and directly on the issue. It does, however, in effect, prescribe a mode of submitting a question of amendment to the people of each of the several states.

A POWERFUL MINORITY

Article V of the Constitution of the United States declares that amendments shall be valid "when ratified by three-fourths of the Legislatures of the several States, *or by conventions in three-fourths thereof*, as the one or the other mode of ratification may be proposed by the Congress." It is apparent that the Congress in submitting any amendment to the states for ratification or rejection may prescribe either one of two modes of procedure:

1. It may cause it to be submitted to the legislatures of the several states.

2. It may cause it to be submitted to a convention of the people of each of the several states.

The mode which Congress prescribes is exclusive and must be followed by the states, but there is a vast difference between the two modes as a means of registering the popular will.

The legislatures of three-fourths of the states might adopt an amendment without the people of the state having the matter discussed before them and public opinion becoming crystallized, as their members might have been elected, without regard to the issue, and prior to Congress having passed the act submitting it to the states for ratification or rejection.

It is interesting to note that all the members of all the legislatures of 48 states number 7,403, and of these 2,316 members constitute a majority in the legislatures in 36 or three-fourths of the several states, who can amend the Constitution, if an amendment be submitted to the legislatures instead of to the conventions of the people of the several states, without the proposition having been discussed before the people and their will ascertained.

It is rather startling to contemplate that 2,316 persons, members of the legislatures of the several states, can change the organic law of this nation of upward of 115,000,000 persons, without a reference of the question to them, by amendment in the manner indicated. Even if, by this mode, the proposed amendment were adopted unanimously by every legislature of all the states in this Union, the fact is that it would then be incorporated in the Constitution of the United States by the vote of only 7,403 persons, who may be members of the state legislatures at the time, and who may or may not represent the wishes of the 115,000,000 inhabitants and citizens of this country.

On the contrary, if Congress should submit any proposed amendment to a convention of the people in each of the several states, then, to such convention called specially to consider it, and either to ratify or reject it, delegates would have to be elected by the people, at an election called for the purpose, and candidates for the convention would have to take a public stand for or against ratification, discussing the issue before the people who would vote for such candidates as represented their views; thus, in effect, we would get at an expression of the people's will as to the proposed amendment—virtually and practically as the result of a referendum in each state.

GOVERNMENT BY THE PEOPLE—

It was through *conventions* that the states originally ratified the Constitution, as will be seen by reference to the United States statutes or Elliot's Debates; in fact, the convention of 1787, which framed the Constitution, recommended to the Congress that it be submitted for ratification or rejection to "a convention of delegates chosen in each State by the people thereof, under the recommendation of its Legislature, for their assent and ratification; and that each convention consenting and ratifying the same should give notice thereof to the United States in Congress assembled"; and the Congress, then existing under the Confederation of the States prior to the adoption of the Constitution, directed the Constitution so framed to "be transmitted to the several Legislatures in order to be submitted to a convention of the delegates chosen in each State by the people thereof, in conformity to the resolves of the convention."

Chief Justice Marshall, in the case of McCulloch vs.

Maryland (4 Wheat 403) said: (The italics are ours.)

"This mode of proceeding was adopted: and by the convention, by Congress, and by the state legislatures, the instrument was submitted to the people. *They acted upon it in the only manner in which they can act safely, effectively and wisely on such a subject, by assembling in conventions.* It is true, they assembled in their several states—and where else should they have assembled? No political dreamer was ever wild enough to think of breaking down the lines which separate the states, and of compounding the American people into one common mass. Of consequence, when they act, they act in their states. But the measures they adopt do not, on that account, cease to be the measures of the people themselves."

"It is, sir," said Daniel Webster, "the people's Constitution, the people's Government; made for the people; made by the people; and answerable to the people."

If the original instrument were submitted to the people, through conventions of delegates chosen by them, *why should not important amendments take the same course?*

The reason may be found in the fact that the proponents of amendments consider it *easier to persuade a limited number of legislators* to adopt them than to induce the people, after discussion, and who are ever jealous of preserving the Constitution of the fathers, to change their organic law. It is rather singular that in these days of much talk about *popular government* Congress submitted to the legislatures, not to conventions of the *people* in each state, the Nineteenth Amendment as to woman's suffrage and the Eighteenth Amendment as to prohibition.

It was proposed in the recent Congress that the twentieth amendment, now pending for ratification, and which would give to Congress the remarkable grant of power "to limit, regulate and prohibit the labor of persons under 18 years of age," should be submitted to conventions of the people of the several states; but its proponents objected and Congress ignored the opportunity to allow the people to pass upon it through conventions, as it could have done under the article of the Constitution quoted and now submits it to the legislatures. In the debate in Congress, Mr. Montague, of Virginia, moved to amend the bill so as to submit the amendment to convention of the people in each state, whereupon Mr. Foster, of Ohio, who had introduced the measure, declared that "the distinguished gentleman of Virginia discloses the motive back of his amendment" (that is to submit it to conventions) and "every gentleman in the House, whether he is for or against this amendment, understands that the motive so evidently back of this amendment—at least, the result to be accomplished by the amendment (that is, to submit the question to conventions of the people) "would be to defeat any child labor amendment." (*Congressional Record, Sixty-Eighth Congress, first session, p. 7254.*)

MANIFESTLY A SOVIET MEASURE

The advocates of this twentieth amendment were not willing that it should go to conventions of the people, because *it would involve the fathers and mothers being heard on the subject,* and the question determined by the electors. Neither did the advocates of the Eighteenth or Nineteenth amendment care to allow the people to pass on those measures. Senator Underwood, speaking in the Senate on June 4, 1919, on the Nineteenth Amendment said: "I should like to suggest to the Senator from Arizona (Mr. Ashurst) that the fathers, some 128 years ago, in writing the Constitution provided a method by which the voice of the people might be heard. . . . Of course, we all know that the constitutional provision directly gives the opportunity, if Congress avails itself of it. . . . We challenge you to go to the hustings; we challenge you to submit this question to the people and not to the Legislatures of the States." (*Congressional Record,* June 4, 1919.)

But Senator Ashurst voiced the unwillingness of the advocates of that measure to trust to the verdict of the people in saying: "I rather, suspect—no, I cannot use that word—I dread, rather, that this may defeat, delay and hinder the celerity with which I would like to see this amendment adopted."

Had there been in this measure a proposition to grant a power to Congress to regulate the employment and conditions of child labor, the advocates would have been willing to submit it to conventions of the people to ratify, but because they know *it is not a child labor law* in the sense of regulating the hours, employment and ages of children, which operate upon the employer, not the child, and because it is manifestly a Soviet measure to "limit, regulate and prohibit *the labor*"—not *the employment*—"of all persons under 18 years of age," they would put it over the people, write it into the organic law of the country, through influences brought to bear on legislators, with or without the popular approval.

LIKE PONTIUS PILATE

The fact that a Congress could be led by the influences which dictated its action to submit to the respective states this amendment is in itself an evidence that it will be influenced by the same agencies to pass laws, pursuant to the power given, create bureaus with power to make rules and regulations, having the effect of statutes, and, in effect, place the youth of this country in serfdom to the whimsical theories and guidance of bureaucratic Federal agents instead of leaving them to the love, guidance and common-sense direction of their parents.

So it is that the same influence which heckled Congress to submit this minor labor amendment to the legislatures, will, by propaganda, appeal to sentiment, threats and heckling, undertake to influence enough of the legislatures to ratify the amendment, without consultation of the people, and we may have our Constitution amended by the action of members of Congress, who, like Pontius Pilate, washed their hands of responsibility and passed it on to the legislatures, and by 2,316 members, a majority of three-fourths of the state legislatures, who may vote to adopt it.

Even in Massachusetts, where at the last election an advisory referendum was held under an act of the

state legislature on the question of the ratification of the proposed twentieth amendment and the measure was defeated by a popular majority of 448,898, out of a total vote cast of 943,340, or three to one, the legislature will not be bound legally by the popular vote. It can ignore the mandate of the people and ratify the amendment, contrary to their ascertained will, although it will not likely venture so to do, and its action would be legal and the state would be counted for ratification, notwithstanding the overwhelming sentiment of the people solemnly and deliberately expressed in opposition to it. This, because Congress in submitting it to the states elected to submit it to the legislatures rather than to conventions of the several states.

DOCTORS AND THE TORNADO

We note with gratification that some of our members promptly responded to the call for help from the grief stricken towns of Southern Illinois after the frightful tornado of March 18. They joined the grand army of physicians and surgeons that was recruited from all portions of our own state and from the adjoining states. The first notice of this awful disaster, brought through the air by radio, was sufficient to start this great movement and before the next morning's sun shed its light over the scenes of death, mutilation and wreckage this body of medical and surgical men were on the field ministering to the victims of the great storm.

The next day brought additional help and this stream of restorative talent did not cease until all demands in every part of the stricken territory were amply supplied. The same prompt reply is made in any great catastrophe or disaster be it cyclone, fire, flood or earthquake. There is always a prompt response by the medical men of the country, who drop their business, leave home, family and friends, undergo all the hardships that are associated with any great calamity. They volunteer their services, without hope of reward or remuneration, work day and night in improvised tents, in the homes that have been spared, in the hospitals of nearby cities, to which the injured may have been transported and do not cease their ministrations until all of the sufferers have been made as comfortable as circumstances may permit.

All honor to this noble band of humanitarians who pour out their store of knowledge, skill and attainments in answer to some great calamity and distress.

PSEUDO-DOCTORS AND THE TORNADO

In writing the story of the noble men who donated their services to the victims of the tornado that descended upon Southern Illinois, the thought came to us time and again, that the names of the pseudo-doctors, the osteopath, chiropractor, napropath, christian scientists and the rest of the 57 varieties, were not included in the list of volunteer workers whose untiring efforts brought relief and comfort to so many of the unfortunate victims of the storm.

While the medical profession took off its coat, rolled up its sleeves and ministered to the wants of the injured, the members of the various cults remained at home and rubbed the spines of a misguided public at a dollar a rub, or administered absent treatment at so much per. It seems as if these self-styled doctors had nothing to offer at a time of public calamity and distress, their services were not needed, were of no value whatever.

Did you ever hear of any member of the various cults who contributed anything to promote human welfare at a time of great human need? Did you ever hear of any organized effort on their part to bring order out of chaos, to banish gloom by bringing in sunshine, to repair broken humanity and restore mutilated bodies?

The members of the medical profession of our county, have organized a free clinic for the examination and treatment of indigent victims of tuberculosis. The same movement is sponsored by medical men in other counties, besides sustaining clinics and dispensaries for the free treatment of crippled children and victims of other diseased conditions.

Did you ever hear of a chiropractic clinic or a dispensary sustained by these pseudo-doctors, where their peculiar style of treatment is offered to the general public, free of charge?

Think it over.—*The Madison County Doctor.*

Correspondence

THE SELF SACRIFICING WORK OF THE LAY EDUCATIONAL COMMITTEE

Chicago, Ill., April 2, 1925.

Lay Educational Committee,
Illinois State Medical Society,
25 East Washington Street,
Chicago, Ill.

I have watched your work during the past year with pleasure. I admire your self sacrificing work. Keep it up and go even further. You have my full sympathy in the work.

Enclosed find cheque for ten dollars to help the work this year. Will be glad to help in the future.

C. M. POHL.

COOPERATING WITH THE LAY EDUCATIONAL COMMITTEE

Decatur, Ill., March 10, 1925.

Lay Educational Committee,
Illinois State Medical Society.

GENTLEMEN: I am enclosing cheque for ten dollars, my small contribution for this year. I wish to obligate myself to pay ten dollars each year, so kindly keep me in touch with what you are doing and send for my ten dollars next March.

Sincerely,

JOHN HUSTON SPYKER.

APPRECIATING THE WORK OF THE LAY EDUCATIONAL COMMITTEE

Rock Island, March 28, 1925.

Lay Educational Committee,
Illinois State Medical Society.

GENTLEMEN: I am in receipt of your letter asking subscriptions to the "Lay Educational fund." I am delaying sending my remittance until the next meeting of the Rock Island County Medical Society when I will introduce a motion for recess for five minutes and give those present a chance to hand their cheques to our secretary who will forward same to the committee. I am heartily in favor of the movement and the work of Miss Keller, and if all the doctors would appreciate the fact that the Chiros are taxed ten dollars a month or $120.00 a year by their organization they would readily realize how cheap we are getting off.

H. J. FRIEDMAN.

Note: It is men like the above that have made the results achieved by the Lay Educational Committee possible. The work done by Miss Keller and the Committee during the last year has done more to re-establish the profession of Illinois into the confidence of the people than the combined results of the work done in the previous twenty years. As a result of the last year's energy on the part of Miss Keller and the committee we now have all health agencies within the state seeking the cooperation of the committee and signifying a desire to function in the future under the direction of the Illinois State Medical Society.

Have you subscribed to the Lay Educational Fund? The preliminary subscription to the Lay Educational Fund is exhausted. If the work is to continue new subscriptions must be forthcoming. Below is printed a blank for your convenience.

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the lay educational campaign unanimously adopted by the House of Delegates of the State Society and of the plan recommended by the Council of the Society, and as evidence of my desire to co-operate with the Officers of the Council and of the State Society, I hereby enclose my check for $..... to aid in defraying the expenses thereof:

Make Checks Payable to the Illinois State Medical Society.

Name .....M. D.
Street .....
City..... County.....

"Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope as follows:

From
.....
.....
.....

ILLINOIS STATE MEDICAL SOCIETY
c/o Cashier, Sheridan Trust and Savings Bank,
4738 Broadway, Chicago, Ill.
Lay Educational Committee.
25 E. Washington St., Chicago, Ill.

UNABLE TO CHANGE DATE FOR STATE MEETING

Monmouth, Ill., March 17, 1925.

TO THE EDITOR: The council received several petitions asking for the change of date for the State meeting at Quincy on account of the Tri-State European tour which conflicts with the date already arranged for the meeting. The petitions were presented to the council at its meeting March 11 the council was unable to change the date for the State meeting for the following reasons:

Owing to the fact that contracts had been given to exhibitors and definite arrangements had been made at Quincy for May 19, 20 and 21 and because of many other arrangements that have been made both by the Society and the Quincy committee on arrangements, it was found to be impossible to make a change in the dates of the State meeting as prescribed by the By-Laws.

Enclosed is a letter from Dr. Peck, managing director of the Tri-State District Medical Association, which will no doubt meet the approval of many members of our Society who want to attend both our meeting and take the trip.

I trust that they will get in touch with Dr. Peck so that satisfactory arrangements can be made.

Very truly yours,
H. M. CAMP, M. D., Secretary,
Illinois State Medical Society.

The following is Dr. Peck's letter.

Freeport, Ill., March 15, 1925.

Dr. Harold M. Camp, Secretary,
Illinois State Medical Society,
Monmouth, Illinois.

Dear Doctor Camp: We are in receipt of your

letter of the 13th inst. We will be glad to arrange the transportation for the physicians going on the Clinic tour to Canada, British Isles and France, so that it will be possible for them to attend the State meeting at least until Wednesday noon, May 20. If these physicians will send me their names I will have their transportation arranged in accordance with this request.

It is a pleasure for us to do everything possible to co-operate with the council and you in the affairs of our State Medical Society.

Sincerely yours,

W. B. Peck, M. D.

GETTING THE DOCTOR'S NAME IN THE NEWSPAPER

HOW MANY PHYSICIANS IN ILLINOIS FELL FOR THE DOCTOR HARRY MILLER LETTER?

A. Henry Arp, M. D.
Arp Bldg.

Moline, Illinois, January 23, 1925.

Dr. J. Henry Fowler, Secretary,
R. I. County Medical Society,
East Moline, Illinois:
Dear Doctor:

Am enclosing some literature which I feel will be of interest to the members and I think that some action should be taken in this matter, as such a procedure is contrary to medical ethics and in the wrong hands might be detrimental to the profession.

I might also call your attention to a John Comerford, 120 Kirkwood boulevard, Davenport, Iowa, a layman, who was sent to call on a family of mine whose daughter has had spinal meningitis. He offered them a clay treatment with internal medication as a treatment for the paralysis resulting from this disease. Although, on my advice, they are not considering the treatment, I think this might also be a matter for consideration. Yours very truly,

A. Henry Arp.

ETHICAL NEWS SERVICE
HARRY MILLER, DIRECTOR
322 SOUTH STATE STREET
CHICAGO, ILLINOIS

Dr. A. H. Arp, January 14, 1925.
Arp Bldg.,
Moline, Illinois.
Dear Doctor:

Have you ever given thought to the disadvantages that the physician labors under in the pursuit of his profession? With the possible exception of the dentist and the lawyer, he is deprived of the many mediums of contact open to all other lines of human endeavor. If a merchant be progressive, he may make use of the newspaper, the mail, the billboard, in furthering his interests; in the case of the doctor, due to ethical considerations, this is obviously out of the question. And so the doctor finds himself hemmed in on one side by the quacks in the profession and on the other by a whole crew of healers that flourish today to the detriment of the many, good, old time practitioners.

Let me ask you another question. Have you noticed in reading the metropolitan papers how consistently the same physicians are mentioned in discussions of medical matters? It is always Dr. Jones or Dr. Brown who is quoted in news stories. Why? There can be no doubt but what persistent mention in the public press is worth dollars and cents to a physician, but why should a select half dozen be kept in the spotlight out of possibly ten thousand equally good doctors? The secret will be found in the friendship of newspapermen that the favored few hold, and so simmer into the news; others have the help of trained newspapermen and in that way find favor with our editors.

Are you interested in a like opportunity for yourself in your own community? If you may not use advertising display space, why not take advantage of the opportunity offered by the news columns? It is the most conservative form of keeping oneself before the public, and this organization of trained newspapermen and doctors is now ready to give you the benefit that heretofore only a select list of physicians in our larger centers have received.

Enclosed is a news story for your local newspaper. The material is common knowledge to all medical men but is news to practically all laymen. There is nothing to disagree with in it, and it has the advantage of being put up in correct newspaper style. It is so worded as to reflect very creditably upon you, to heighten your prestige in the community, and in the long run to result in financial benefit to you. Take or send this story to your editor. If he prints it, you will mail us a check for $15.00 within five days; if he refuses to run it, simply return it to us in the enclosed envelope and there is no cost to you. You may offer the story to as many more papers as you like, with no extra cost to you. You are the only physician in your community that is being approached on this and if you feel that you cannot take advantage of our offer, please return the story so that we may offer it to some one else. You will readily see that this article, if published, is worth real money to you; if not published, you do not owe us one cent. All we ask is that in sending the check you also include a clipping of the article so that we may have it in our records.

We have in preparation a series or articles dealing with various diseases, all written in popular style but adhering strictly to the facts. If you decide to make use of the enclosed article, you will be considered as having exclusive rights to their publication in your community in much the same way as with the first article. However, if you feel the need of special

articles, tell us your problem and we'll prepare just the articles that you want.

Please remember that there are no strings to this offer. If your editor publishes the enclosed article, you mail us your check and clipping; if not, you return the story to us. We know the merit of the article and feel that your editor will see its news value. And as for yourself, can you think of anything else that will go as far toward making 1925 a truly happy and prosperous year for you? Yours very truly,

HARRY MILLER, Director,
ETHICAL NEWS SERVICE,
Chicago, Illinois.

GOITRE EASIEST DISEASE TO PREVENT

Goiter, one of the gravest problems confronting medicine, is the easiest known disease to prevent, according to Dr. A. H. Arp of this city. Dr. Arp has recently completed a survey of medical literature on the subject.

The chocolate tablet method for the prevention of goiter is most popular with the medical fraternity at the present time, says Dr. Arp. Following its successful use in Switzerland, the recent experiments at Akron, Ohio, seem to have borne out all that had been claimed for it. Of the thousand girls in the Akron schools who were given the treatment over a considerable period, not one developed goiter, while of the two thousand other girls who were under observation but who did not take iodine, 27.6 per cent developed goiter. Furthermore, 60 per cent of the girls who had goiter when the tests were started and who took iodine systematically found that the thyroid had returned to normal size, while of those that did not take iodine, very few cases showed any tendency to decrease.

The Great Lakes region continues to be the most fertile field for this disease, says Dr. Arp, although a rapid multiplication in cases is noted in the Middle and North West, and to a lesser degree throughout the country. Fatigue and overwork seem to bear a definite relation to goiter, and diet and drinking water unquestionably have their effects. More cases are found in high altitudes than in low, and women are much more disposed to it than men. Because of its appearance in earliest youth, there is believed to be a possibility that it is transmitted with the hereditary characteristics. It is not infectious, and an iodine course of treatment generally proves effective.

While the disease in its most advanced stages will only yield to operative measures, states Dr. Arp, prevention should begin in early life. In some places, he says, splendid results have been secured when tried on girls in the period of adolescence, but equally good results are known to have been gained with children of eight and ten, and with boys as well as girls. Pregnancy is a particularly desirable time for the administration of treatment as at that time it tends to prevent its development in the child as well as the mother.

(Copied from copy which accompanied Ethical News Service letter to A. H. Arp.)

Dr. Arp filed protest with the Rock Island County Medical Society.

Original Articles

MEDICINE AND THE FUNDAMENTAL SCIENCES*

CHARLES K. EDMUNDS
Provost, Johns Hopkins University.
BALTIMORE, MD.

What is a University? Universities have in their long history had many forms and played many parts; but their essential nature, as a distinctive and necessary part of any civilized society, is simple and unchanging.

A university is an organized and continuing body of men associated together, after due training, for a threefold task:

1. To deal at *first hand* with the sources of knowledge, to verify truth and so far as possible enrich man's store of it;

2. To impart such knowledge, and the methods by which it may be further extended, to students at the final and highest stages of their preparation for their own active professional careers.

3. To inspire men thus trained to service.

How Did Universities Arise? The function of discharging this threefold task, and the profession exercising it, are older than the university itself. "Professors," or professional investigators and teachers, first appeared as individuals in Greece half a millenium before Christ. They introduced the then new and startling conception of the possibility of improving the conditions of life, and directing more effectively man's activities through the free and methodical exercise of the exploring intelligence.

Around these men soon appeared the beginnings of organization; first in the form of the philosophical schools, originally gathered about some great thinker and teacher such as Aristotle, but often persisting as organized bodies for several centuries. Somewhat later a few full-fledged universities arose, notably the "Museum" of Alexandria with its rich endowments and large corps of scholars carrying on both original inquiry and advanced teaching.

Essentially similar were the origins of the modern university. It began in the twelfth and thirteenth centuries; and in its earliest form it was simply a guild or association of students and professors.

What then is the Nature of a University? It is important to realize that all universities, an-

*Read before the Inter-State Post Graduate Assembly of America, Oct. 27-31, incl., 1924, Milwaukee, Wis.

cient and modern, are built of brains, not bricks.

The eye sees campus and buildings, library and laboratories. But these are not the essence of a university. They are the tools, without which progress is impossible, and they largely constitute the contrast between the university of today and the university of ancient times.

But the essence of a university is its *men*, and the *spirit* which guides them.

This spirit is simply a faithful adherence to the triple function of teaching, research and service.

The teaching is fundamental. But so is the spirit of research; the active quest for truth as distinct from its passive absorption—without which no teaching institution, however large, has the genuine character of a true university.

Service. To these two we must add *service.* Service to the local community, service to the state, service to the nation, yea, and service to the world; and these cannot be maintained except through service to the individuals who compose society. A true university cannot thrive apart from an outlet in the community for its product in men, in ideas and in spirit. It must keep its feet on the ground; it must develop "legs" as well as "heads" . . . I am reminded of two stories to illustrate this double point. Lloyd George, when making one of his famous campaign speeches, was heckled by a man who cried out, "What do you know about that, you little runt of a Welsh lawyer!" To which Lloyd George like a flash replied, "That fellow must be an Englishman, for in Wales we measure a man from his neck up!"

True, the university must develop intellect. But that intellect must reside in a body and that body, to be effective as a servant of mankind, and ever to serve itself fully, must have legs. . . Abraham Lincoln was once present when some friends were discussing how long a man's legs should be. When the question was referred to him, Abe Lincoln said, "Well, I've always thought a man's legs ought to be long enough to reach the ground!" . . .

Indulge yourself in all the high thinking you can, but keep mindful of those about you who need your help. There must be teaching, research and service, and the greatest of these is *service.*

Yet the preparation and foundation for that service involve the broadest possible scientific research; and it is of this that I wish to speak a little more in detail.

Importance. For more than a century the greater number of those researches, which have recast radically our understanding of nature and of human history, have modified largely the physical conditions of human existence and of personal health, and have made possible those inventions and commodities without which our vast modern populations could not so much as subsist, have been carried on by members of universities in university libraries and laboratories.

The Pursuit of Research. The motto of Johns Hopkins University is *Veritas Vos Liberabit* "the truth shall make you free."

The University has always been an apostle of truth for the sake of truth, of the pursuit of new knowledge with new knowledge as its own reward, and yet in its practice of that principle many discoveries of very great practical importance have been made.

The Medical Field. Now the greatest field of service, in which the University as a discoverer of truth may apply it for the benefit of mankind, is the field of medicine.

Old as is the science of medicine, the last fifty years have seen a greater advance than in all the preceding period since the days of Hippocrates himself. Yet so much remains to be done that medical science itself is rapidly undergoing a great change. It is seeking to apply to life processes the fundamental principles of physics and chemistry. It is seeking in biology and genetics, the secret of life processes themselves. And subjected to such inquiry, life presents itself as an increasingly complex problem of physics and chemistry.

Growth, the assimilation of food and all the normal functions of the body, in so far as medical knowledge has begun to understand them, are controlled by a most intricate system of chemical and physical reactions which take place in the laboratory of the body. When these reactions become abnormal their outward manifestations constitute the symptoms of disease.

Consequently our leading medical schools are endeavoring to make medicine a biological science by applying the methods of the fundamental sciences to the study of life. They realize that the physician, if he is to know how to restore health to the diseased body, or better still to

prevent disease, must first know the laws governing the normal functions of the healthy body.

When Johns Hopkins left his money for the founding of the university which bears his name in his native city of Baltimore, he left an equal sum for the funding of the great hospital which also has made his name known throughout the world. In his mind there was clearly a fundamental connection between the two institutions—moreover, the first president of the university, Daniel Coit Gilman, was also the first director of the hospital. And when the university opened its doors in 1876, it was for advanced students in six fields of research, the three fundamental natural sciences of physics, chemistry and biology being well represented under the leadership of Henry Augustus Rowland, Ira Remsen and Henry Newell Martin.

The unusual opportunities for research and the magnetic character of these leaders brought to the university as students many men who have since won distinction in these three fields, as Wm. K. Brooks, W. T. Sedgwick, E. B. Wilson, Wm. H. Howell, M. M. Metcalf, Frederick S. Lee and Thos. H. Morgan, in biology; H. N. Morse, H. N. Stokes, E. H. Keiser, Geo. M. Richardson, C. H. Herty and E. P. Kohler in chemistry; E. H. Hall, E. L. Nichols, A. L. Kimball, Henry Crew, E. B. Rosa and General Geo. O. Squier in physics.

It was with such preliminary emphasis on these three branches of natural sciences, and in such an atmosphere of research and of high educational standards that the Medical School was opened in 1893 as an integral part of the University and the active nexus between the University and the Hospital.

From the start this Medical School has required its students to have the bachelor's degree before admission and has required complete preparation in the basic sciences of chemistry, physics and biology, thus early emphasizing the importance of these fundamental subjects to the further progress of medicine.

For a decade or more special courses in each of these subjects had to be provided for the benefit of students coming to our Medical School from other institutions, before the colleges realized the necessity for a thorough grounding in physics, chemistry and biology as preliminary to the successful study of modern medicine.

It is, I believe, generally admitted that Johns Hopkins has contributed to the development of scientific medicine in this country, and also, I believe, to the development of the modern method of investigation and advanced instruction in physics, chemistry and biology. What I wish just now to emphasize is the fundamental relation between the two. The achievements in medicine have been largely due to achievements in these other fields.

To make this clearer, a few concrete examples may be cited and should suffice:

Remsen, working in his chemistry laboratory, discovers a new compound, a sulphonephthalein, derived from coal tar acids. So far as he is concerned that is the end of it. He turns at once to another research. But Dr. Abel, the head of the Department of Pharmacology in the Medical School, takes this compound and subjects it to further research, finding that it serves as a useful guide to the condition of the kidneys. Then, in the hospital, the urologists adopt it to determine the ability of certain patients to withstand the shock of operation; and one of the first patients on whom it is used is Remsen himself!

Verily, not a vicious circle, but a circle of life.

Roentgen, studying the discharge of electricity through gases purely from the standpoint of the physicist discovered x-rays. The use of these rays in the diagnosis of surgical cases immediately followed and also a little later their use as a curative agent. Yet, owing to an insufficient appreciation by the physician of some of the conditions quite a few patients and also workers suffered severe injuries. Further physical research showed what the necessary precautions were and led to a perfection of apparatus and of technique.

Let us follow up just one case in which the use of x-rays as a diagnostic indicator formed only the first step in a series of discoveries the end of which is not yet.

By means of Roentgen photographs the peculiar conditions of the bones of the head and of the ribs were revealed in the case of rickets in children.

Howland at Johns Hopkins, by direct analysis showed this beaded condition of the bones to be due to a deficiency of lime or of phosphate in the blood.

Huldschinsky effected cures by exposure of patients to the radiation from a quartz lamp with mercury vapor as the radiant, especially strong

in the ultra violet; while Hess attained cures using ordinary sunlight.

McCollum and Park at Johns Hopkins working on rats caused rickets through a deficiency of calcium or of phosphorus in their diet and definitely cured the same with sunlight. Then it was demonstrated that the portion of the solar spectrum really effective was only the ultra-violet in the neighborhood of 400 millimicrons or say all below 320.

Pfund, working in the physics laboratory at Johns Hopkins on a problem connected with the darkening of certain paint-pigments when exposed to sunlight, is thereby able to suggest to Dr. Janet Howell Clarke at our School of Hygiene, herself a physicist, (the daughter of our Dr. Wm. H. Howell) a simple method for measuring the intensity and dosage of the ultra-violet radiation to be used in curing rickets by the use of an exposure meter in which a fresh area of paint-pigment known as lithopone is rapidly darkened by the rays from about 320 down, till it matches a standard tint.

But suddenly the plot thickens! For it is found that, by feeding cod-liver oil the same good results are obtained as with ultra-violet rays!

Then from Wisconsin comes the report that some ordinary foods subjected to radiation before feeding produce the same effect as cod-liver oil. Possibly this results from an alteration of the electrical condition of calcium or phosphorus salts already present in the intestinal tract rendering them available for absorption into the blood whereas without such excitation they are not in condition for assimilation.

The complete elucidation of these curious phenomena involves the action of semi-permeable membranes, as well as the photo-electric and physiological effects of radiation on the colloidol conditions of body fluids, body tissues and cells. It even looks as if some of the vitamine principles that have been already recognized are really electrical conditions and not material substances. And it is clear that the whole field of the physiological effects of radiation needs exhaustive study. Naturally, that in turn also means the further study of radiation by the physicist himself.

The first step in this general direction would be the establishment of an adequate Department of Radiology and Biophysics, to study the bearing of physical phenomena on the problems of medicine. There is need of a special department to study the therapeutic value of radium emanations. Little is known also of the value of light. Medical science is just beginning to realize that light, like coal tar, is a crude product. It is made up of a multitude of wave lengths, some beneficial in their action, like the ultraviolet, some harmful, like the infra-red. There is need that the physicists do much the same with light, from the medical standpoint, as the chemists have done with coal tar, which has been a source of so many weapons against disease.

The new department would also study the physical action of water, for little is known of water therapy, the effect of various baths on the cells of the human body, and the physical action of solutions in promoting the circulation of the vital body fluids. This opens up an entirely new field.

If, for instance, the Medical School would attract to its faculty a leading physicist, who, with his assistants, might devote himself to the study of surface tension, osmosis, radio-activity, the electrical forces concerned in colloidal suspension and the activities of x-ray, ultra-violet rays and various other forms of radiation, there is no doubt that the vision of the students would be broadened and the fruitfulness of medical research increased.

Like the study of diseases of the eye, the study of diseases of the ear, nose and throat seem inadequately provided for in American medical schools. So little is known of the underlying causes of deafness that the General Education Board, the Western Electric Company and other interested individuals have provided a fund with which to begin fundamental researches dealing with the basic anatomy of the organs of hearing and the effect on them of other diseases. Dr. Samuel J. Crowe has these researches under his direction at Johns Hopkins.

Intense radiations from furnaces have long been known to be injurious to the human eye and even to cause cataracts with resulting blindness to workmen.

Dr. Pfund, a Johns Hopkins physicist, has produced gold screens by depositing a thin layer of gold on yellowish glass, which allow the visible radiations to pass through, but shut off both the ultra-violet and the infra-red rays that cause the trouble. These screens have been made into goggles which protect the eyes of workmen around furnaces, and are also used in motion picture

technique. This might be called "preventive medico-physics."

A question of peculiar interest to man as a "worker", i. e., as an "engine" or "prime-mover", is the problem of the conversion of the fuel elements in our food into work, essentially a problem in physics.

A. V. Hill, of University College, London, trained as a physicist at Cambridge University and adding his physics to physiology, has recently applied in a masterly manner the laws of physics in great detail to muscular activity. With Gasser of Saint Louis, formerly of Johns Hopkins, he has shown that a muscle acts precisely like an elastic body which also possesses high viscosity. He thus explained the cross striations of muscular fibre. In certain cases he has demonstrated the energy relations of muscular activity, showing a sort of hysteresis, and he has pointed out the importance of the speed of reaction. For instance, he has shown that there is a certain definite critical speed at which a given action should take place to secure the maximum work in return for the expenditure of energy through muscular activity. In ascending a given flight of stairs there is for a given individual a definite or critical speed at which the expenditure of energy is a minimum. To ascend more slowly or faster than this is to waste effort. In one case investigated this critical speed was 78 steps in 100 seconds.

Similarly the factor of speed is being more and more recognized as an important one in the chemical reactions taking place in the body as well as in the muscular activities when doing external work.

The study of chemical accelerators, the enzymes, and the study of colloidal actions which are so largely involved in the functioning of nerve and cell, muscle and organ—present such complex problems that the combined labors of the chemist, the physicist and the biologist as well as of the pharmacologist and the pathologist are all needed for their solution.

Colloids. All the tissues, muscles, and fluids of the body are colloidal suspensions. Hence the study of colloidal chemistry is of vital importance for the development of medicine as a science.

The sensitiveness of the kidneys to acidity, the coagulation of the blood, the stiffness of muscles are all instances of the disturbance by very slight changes of the stability of a colloidal system vital to health.

Surface tension, electrical changes and conditions of ionization, response to radiation, the behavior of semi-permeable membranes—all these are factors to be studied. They are fundamentally physical-chemical problems.

During the war Embden of Frankfurt University discovered that acid sodium phosphate increases a man's capacity for muscular work and probably aids in prolonged mental work also. It appears to have no bad after effect and can be taken for long periods. It may become as normal a beverage as tea or coffee, as the cost is low.

Chemistry will be more and more applied to the production of the most important group of physiologically active substances—namely foods. Many, including the proteins, we shall probably build up from simpler sources such as coal and atmospheric nitrogen. Haldane, Bio-chemist at Cambridge, allows not more than 120 years before a completely satisfactory diet can be prepared in this way on a commercial scale.

The need for collaboration is clearly indicated.

Ether was known to chemists for over 500 years before its value as an anaesthetic was appreciated.

Magnesium sulphate was known to chemists for 200 years before it was learned what great relief it gave in lockjaw, burns and strychnine poisoning.

Twenty-three years elapsed between the discovery of amyl-nitrite by the chemists and the discovery of its medicinal properties by the physician; during this interval tens of thousands suffered the tortures of angina pectoris needlessly just because the chemists, the pharmacologists and the physicians were not working together.

For, just as the pharmacologist is the armorer of the physician providing him with new and better weapons in his fight against disease, so the chemist is in turn the father or elder brother of the pharmacologist. The ultimate aim of their collaboration is to make the physician as sure of the action of those substances which he puts into the human body as is the chemist when he mixes chemicals in a test tube.

One of the most important fields in which the pharmacologist must rely thus upon chemistry is the isolation, study and preparation of the pure principles of our organic secretions.

One example will suffice to illustrate. Schafer

& Oliver noted the presence of a vaso-constrictor principle in the suprarenal glands. Abel of Johns Hopkins isolated it in the form of a derivative and prepared a number of salts of this derivative. Takemine precipitated the pure principle of adrenalin by means of ammonia which Abel also had used. The chemical structure was determined and it is now prepared synthetically. Among its numerous and now well known advantages we may note that it reduces the toxic effects of a local anesthetic, relieves the spasms of acute asthma, checks hemorrhage of a capillary or small arterial character; sustains the heart in operative cases and in pneumonia.

Perhaps the greatest immediate problems of chemo-medical research are those involving the isolation of the pure principles of the antitoxins, bacterial vaccines and serums now used so widely in the cure or prevention of infectious diseases.

What indeed is disease? As yet there is no adequate answer. We know that germs are active in bringing about certain pathological conditions but the knowledge of how they are able to begin their work is still shrouded in much uncertanty. Everyone is constantly breathing the bacilli of tuberculosis and a dozen other diseases but all of us are not sick. What enables the cells in the bodies of some to resist the attack of disease germs? What gives them ingress in others? What chemical and physical changes take place to make the same individual at times susceptible and at times immune?

The detection and destruction of the cholera bacillus, while involving considerable science, really involved only one purely biological principle, important but not profound—that some bacteria kill some men. The really scientific parts of the process are the optical and chemical methods involved in the magnifiction, staining and killing of the bacilli.

Yet the immunization to typhoid apparently involves biological principles which are neither simple nor completely understood.

While the microscope, with all its marvelous improvements, can go no further than the cell or its divisions, chemistry can go much farther. Cell secretion, cell respiration and cell nutrition are clearly only different aspects of the same whirl of molecular activity. Physical-chemistry will carry its analysis down to the molecules and atoms, even to the corpuscles or nuclei which constitute the fundamental electric charges.

Chemistry and Biology

Great good would result from the appointment of chemists and biologists within the medical faculty. Were outstanding men in these sciences secured, both advanced students and instructors from other departments of the school would have the opportunity of working under conditions which could not fail to advance medical knowledge. At present the Department of Physiological Chemistry at Johns Hopkins, for instance, is primarily concerned with the metabolism of the body; but such investigators as are contemplated would deal with the fundamental chemical phenomena that apply to almost every problem of medical science.

The remarkable power of the blood to maintain its normal alkalinity has been elucidated completely by Henderson of Harvard on simple principles of physical chemistry, showing the existence of chemical "buffers."

Dr. George Crile of Cleveland has recently brought forward proof in support of the theory that life itself is a phenomenon which is primarily based on the electrical properties of the cell, the smallest division of living matter. Complete knowledge of the articulation of the bones and muscles of the body and the flow of the blood is also recognized to be dependent on the application of physical laws to the interpretations of these actions.

Positive and far-reaching results in almost every branch of medicine will accrue from the concerted attack upon its problems of expert chemists, expert physicists and expert biologists and medical men organized on the basis of this fundamental physical-chemical point of view.

In turn the chemist or the physicist needs the co-operative effort of the medical investigator—the pathologist, bacteriologist, internist, for only by such co-operation can the vital problems of medicine be brought home to the consciousness of the experts in the fundamental sciences.

It must be clearly borne in mind that these specialists should be primarily physicists, or chemists or biologists—not medical men with some training in one or the other of these fields. Moreover they should not have been trained with any special or narrow field of application of their science in view. What is needed is not technologists but scientists with a broad fundamental grasp of the principles of physics, or of chemistry or of biology. Only those thus thoroughly trained

will be able to tackle with maximum success the intricate problems involved in the more accurate determination of the physical and chemical aspects of man's body and its life.

Chemistry is the fundamental science of the transformation of matter.

While physics is the fundamental science of the transformation of energy. Life in all its forms and phases is the highest, most complex combination of transformations of matter and transformations of energy. In this we have the key to the most important phases of modern medical research, and to our faith in its future.

The life work of Pasteur is, of course, the best known and also one of the most illuminating examples of the inter-relation of physics, chemistry, bacteriology and medicine. Such also was his personal character as well as the character of his work that by popular vote he was declared the greatest of Frenchmen. Certainly, his service to humanity looms large with every addition to our knowledge of infectious diseases.

It is not necessary, I take it, to remind you of the details of Pasteur's work; but merely to recall its broad lines in order to emphasize the sequence and inter-relations between the sciences involved in his achievement which has been of such untold benefit to humanity.

Studying the crystals of racemic acid, intent only on the advancement of knowledge, he discovered a dissymmetry between two groups of crystals which were chemically identical. The two types of crystals in solution produced opposite rotations in a beam of polarized light. Thus the constitution of racemic acid formerly so mysterious was elucidated and a new class of isomeric substances discovered. A distinctly unforeseen route had been opened in science which led twenty years later to the development of stereo-chemistry as a distinct field.

Pasteur succeeded in producing racemic acid synthetically. He observed that one class of the crystals ferments while the other remains inert. He showed that fermentation, which formerly had been regarded by Liebig and others as a purely chemical phenomenon, is due to the presence of a host of bacteria, which eagerly devour one class of crystals and ignore the other. Here was begun the study of the great putrefactive changes and of the part played by bacteria in disease, which made the world Pasteur's debtor. Cleanliness in modern surgery, the cure of rabies, the germ theory of infection, all go back to those simple experiments in pure science—first physical, then chemical and then biological.

It has been estimated that the discoveries of Pasteur, merely in their economic value, to say nothing of their humanitarian value, more than offset the material loss by the Franco-Prussian War of 1870. Thus the works of a single scientist of genius, trained in a university atmosphere, created more wealth than the Armies destroyed.

What a privilege for the student even of today to follow in his footsteps; to feel the stimulus of his example; to realize in some measure that high sense of devotion to truth, of obligation to humanity, best typified in Louis Pasteur!

A STUDY OF 22 CASES OF LUNG ABSCESS*

P. S. WINNER, M. D.,
Medical Superintendent, Municipal Tuberculosis Sanitarium,
CHICAGO

The subject of lung abscess has received a great deal of attention the last few years. With the advent of the x-ray, the condition is more often recognized and numerous new methods for treatment have been outlined. I shall attempt to give our results in a series of cases collected within the last four years. What I have reference to is the true non-tuberculous abscess frequently observed in sanitariums handling cases of pulmonary tuberculosis. A diagnosis of tuberculosis is often made on these cases as the symptomotology is much alike, that is, cough, intermittent temperature, prolonged weakness and even occasional hemorrhage, make one strongly suspect pulmonary tuberculosis. The type we have observed here is the chronic type that has existed for many months or years. None of our cases have come to post mortem and I will therefore not dwell on the pathology of this disease. What I will discuss more in detail is the etiology, incidence and the treatment in this series of cases. While it is stated that lung abscess is at times encapsulated, the patients observed here were all of the type rupturing into a bronchus with profuse and constant foul expectoration.

Etiology. Statistical data collected in the literature as to the causative factors is rather confusing. However, all writers have noted the relative frequency of the disease following ton-

*From the Clinical Dept., Mun. Tub. San., Chicago. Read before the Section on Medicine of the Illinois State Medical Society, Springfield, May 7, 1924.

sillectomy. Percentages range from 20% to 30% of the cases of lung abscess following operations upon the upper respiratory tract. Richardson in 1912 pointed out that lung abscess following tonsillectomies under general anesthesia was rather frequent. Since then other observers have noted the same thing. Bassin in 1913 collected 16 cases following tonsillectomy, while Manges reported 9 cases seen at the Mt. Sinai Hospital. Whittemore[1] reported 32 cases of lung abscess 17 of which followed tonsillectomy. Singer & Graham[2] in 34 cases of lung abscess report 24% as following tonsillectomies. Moore[3] states that pulmonary abscess occurs once in 2500 to 3000 tonsillectomies, although at the Mayo Clinic in one hundred thousand tonsillectomies no lung abscess was observed. Pilot[4] citing 40 cases of lung abscess, ten of which developed immediately following general anesthesia, six followed tonsillectomy, two hysterectomy, one appendectomy and one herniotomy. W. B. Lennon, of the Mayo Clinic, reports 81 cases of lung abscess, pneumonia ranking first as a causative factor with 31 cases, influenza second with 19 cases and operations on the upper respiratory tract as third with 13 cases. Of 208 lung abscesses collected in the literature as a result of tonsillectomy, only 7 were found in patients operated on under local anesthesia. In 2534 tonsillectomies performed during the last five years at this Sanitarium all under general anesthesia, one lung abscess was noted in one case in a child nine years of age. The youngster fortunately recovered by a sudden evacuation of the abscess through a bronchus.

Pulmonary infections as a cause of lung abscess is frequently encountered. Among 948 cases of pulmonary infection admitted to Hospital of the Rockefeller Institute from 1914 to 1919 lung abscess was found nine times, and in only two instances did it follow a pneumococcus lobar pneumonia. McCray collected 75 cases of lung abscess following acute lobar pneumonia. Frankel analyzing 1200 cases of lobar pneumonia finds that 2% developed a pulmonary abscess. During the severe epidemic of influenza, only a small percentage developed abscesses. Hedbloom reporting one hundred cases of prolonged influenzal infection noted three cases of lung abscess. Lockwood reports ten cases of lung abscess following influenza. In the 22 cases re-

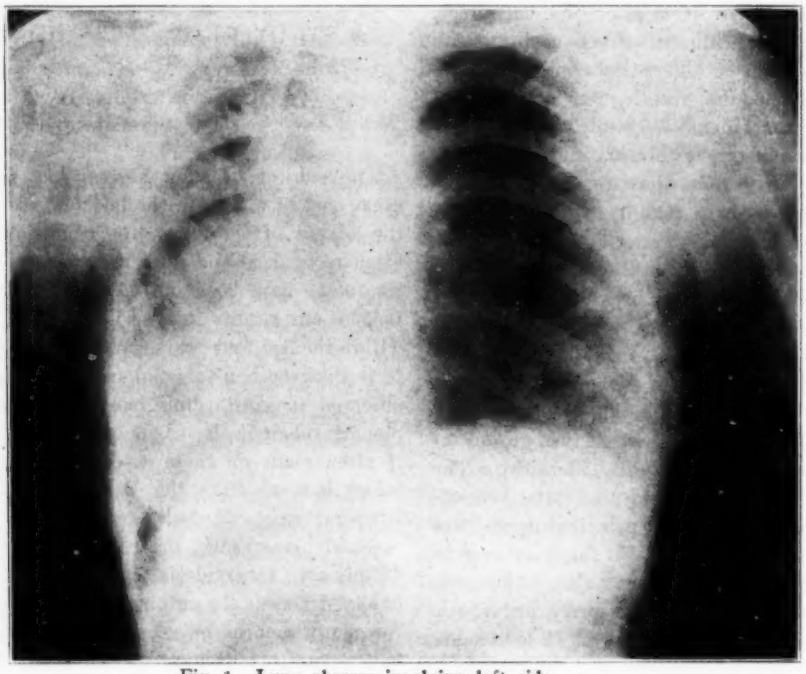

Fig. 1. Lung abscess involving left side.

1. Whittemore: Clin. of North America. Jan., 1921.
2. J. J. Singer and E. A. Graham: J. A. M. A., Vol. 8, July 21, 1923.
3. Moore: J. A. M. A. Vol. 78, April 29, 1922.
4. Pilot: C. M. Bull., March 15, 1924.

ported herewith the etiology is as follows: 32% following tonsillectomies, 23% following pulmonary infections, 9% following appendectomy, 4% following measles and 32% cause unknown.

Location of abscess. The lower lobes seem to be more often affected, the right more than the left. Moore in an analysis of his cases gives as 60% showing lower lobe involvement, 41% of these being on the right while 19% occurred in the left lower. The location as found in our cases is as follows: Upper lobe right 27%, lower lobe right 35%, lower lobe left 17½%, more than one lobe right side 13%, more than one lobe left side 8%.

rapid pulse. One other case, a young girl 17 years of age, with an abscess of ten years' duration, shows clubbing of fingers, expectoration not marked, and is able to be employed about the office daily. This case is now under pneumothorax treatment. The physical findings are invariably alike. Dullness of percussion and diminished breath sounds over the involved area are the most constant signs. According to Norris and Landis only 8 out of a series of 63 lung abscesses gave definite physical findings. Our percentage is much higher than those given above. At times malignancy will be found confusing as the x-ray will show a density, but the

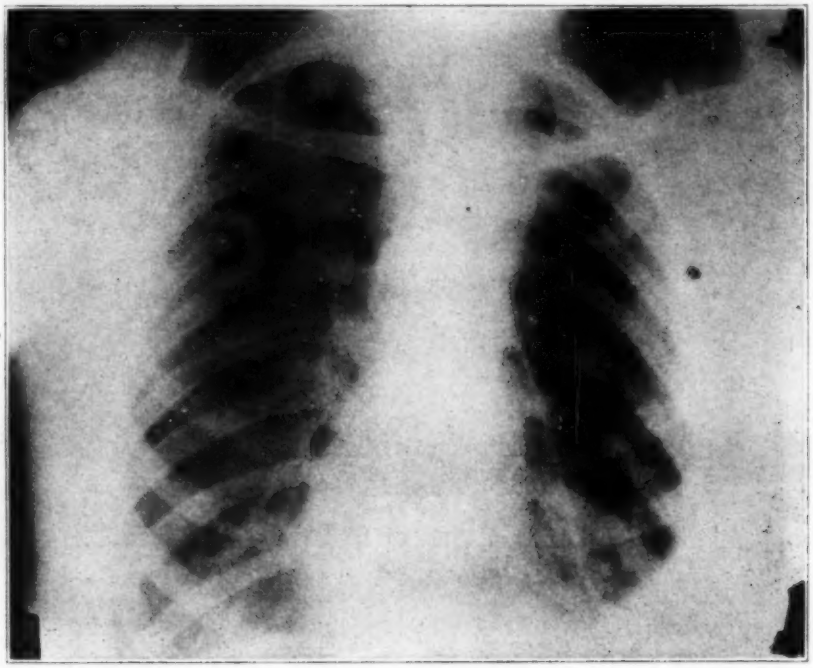

Fig. 2. Same case. Condition on discharge. Pneumothorax clinically recovered.

Symptomatology: The symptoms encountered were quite characteristic. Loss of appetite, restlessness, general weakness, irregular temperature, clubbing of fingers and foul sputum were found as a general rule. The temperature is not always high and clubbing of fingers is found only in cases of long standing. One case, a child nine years of age, admitted in a dying condition, with a lung abscess following tonsillectomy, showed no clubbing of fingers and the profuse, putrid expectoration was the most marked symptom, together with a rather low temperature and history of putrid sputum will readily clear up the diagnosis. Carman has pointed out that the diagnosis of pulmonary malignancy is nearly always possible from the plates, but in certain cases the patient's history and his physical findings must be considered.

As an aid in diagnosing, needling and the bronchoscope have been mentioned, but I doubt whether this is necessary in a great many cases. Puncture is unjustifiable, as death from pleural syncope, cerebral emboli or empyema may occur in certain cases. The bronchoscope has its dis-

advantages as there is danger of infecting the healthy lung. With a good history, x-ray and careful physical examination, I doubt very much the advisability of this procedure.

Age and Sex. In this series of cases 14 were found in males and 8 in females, the ages ranging from 10 to 57 years.

Treatment. Both surgical and medical measures have been suggested. In my opinion, postural drainage and expectant medical treatment should be undertaken before advising more radical measures. The use of the bronchoscope has been advised to irrigate the cavity and to aspirate the pus. Lockwood is of the opinion that the bronchoscope cannot be relied on as a routine treatment. Moore in a recent article published in the J. A. M. A., analyzing 13 cases given bronchoscopic treatment, gives 25% as cured, 41.6% improved and 35.5% unimproved. He states that multiple abscessed conditions with long standing bronchiectasis do not respond well to bronchoscopic nor to any other form of treatment. We have used artificial pneumothorax in a few selected cases and I believe that it offers a simple and fairly successful means of treatment. I find that Forlanini treated a case of putrid abscess with pneumothorax. Towksberry[5] reports two cases of acute pulmonary abscess treated with artificial pneumothorax both cases recovering. He gave small amounts of gas frequently repeated. He states that the mortality in lung abscess treated medically was 60% while those treated surgically were 30% and strongly advised the use of pneumothorax. One year later the same author[6] reported an additional 8 cases treated by this method. Six of these recovered and two improved. C. L. Harrell reports one case with cure in a woman following labor. He maintained compression for 13 weeks with a total of nine refills using in all 3500 c.c. of gas.

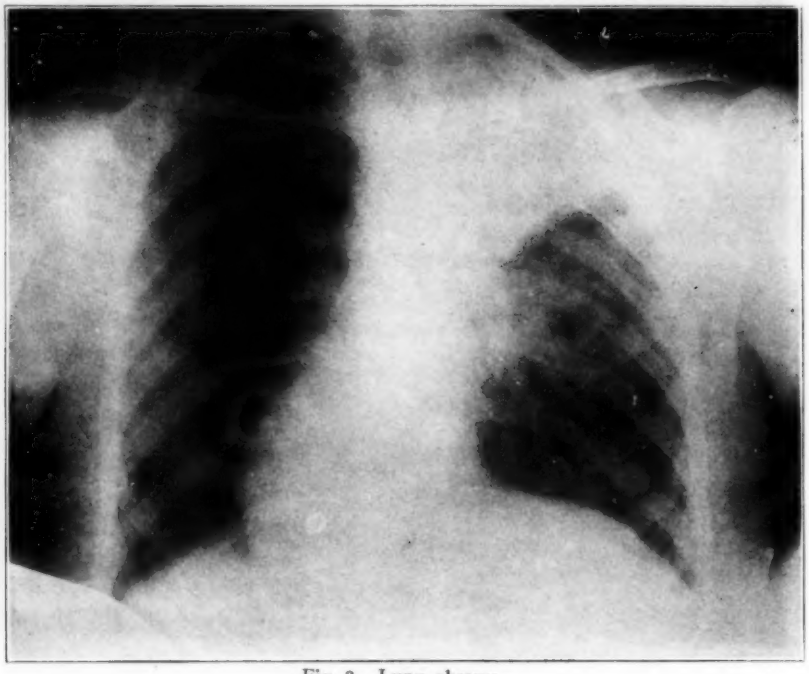

Fig. 3. Lung abscess.

Jakobaeus in 1914 reported three cases and Goldberg and Biesenthal also reported three cases with good recoveries. Morgan in 1922 reports four cases, one cured by posture, one by pneumothorax, one unable to do a pneumothorax due to extensive adhesions, and one death as a result of empyema following pneumothorax. Giese in 1922 cites five cases treated with pneunothorax with two recoveries. Barlow in a publication from the Surgeon General's Office gives

5. Tewksberry: J. A. M. A., March 10, 1917.
6. Tewksberry: J. A. M. A., Feb. 2, 1918, Vol. 70.

the following outline as to the procedure in lung abscess

1. *Foreign body abscess.* Bronchoscopic treatment indicated.
2. *Post influenzal diseases.* Pneumothorax almost impossible. If possible, it is usually contra-indicated by the nearness of the pleura and danger of rupture.
3. *Extra pulmonary suppurative conditions.* Pneumothorax not suitable.
4. *Aspiration abscess.* Indications for a complete pneumothorax at a very early date—at a later date, pneumothorax is impossible on account of adhesions.
5. *Infarct type of abscess.* Pneumothorax is usually impossible and is contra-indicated.

In this series of 22 cases, six were treated by pneumothorax, 4 by drainage and rib resection and 12 treated medically, that is, the routine treatment of rest, fresh air and posture. I will cite a few of the cases with the histories, treatment followed and results.

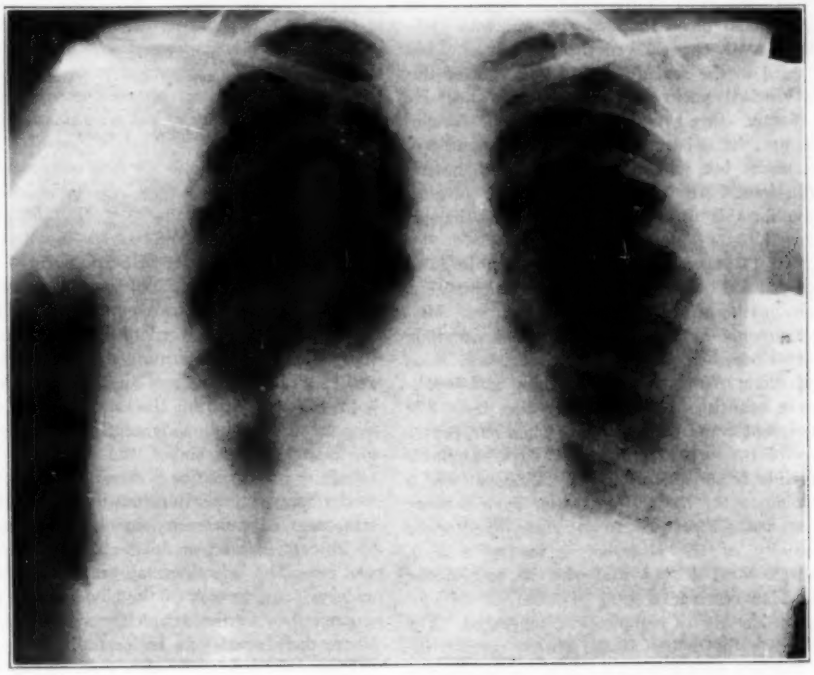

Fig. 4. Same case. Pneumothorax treatment showing complete collapse.

REPORT OF CASES

F. W. Admitted with a diagnosis of incipient tuberculosis. Early history negative. In July, 1923, tonsillectomy performed under general anesthesia. Shortly afterwards began complaining of pain on the right side of chest. Developed a slight cough and sputum at times blood-streaked. Lost in weight. Sputum was very foul, greenish in color. Tonsils were only partially removed. Dullness and increased vocal fremitus over lower left chest with bronchial to amphoric breathing over the same area. X-ray showed a density from the region of the sixth rib downward. Right lung clear. Red cells 3,920,000, leucocytes 8,750, and hemoglobin 80%. Wassermann negative. Sputum negative for T. B. Placed on rest and posture with some improvement. However, he ran a rather intermittent temperature and pneumothorax was started. Small amounts of gas averaging about 300-450 c.c. of gas given frequently repeated. The patient recovered clinically, although the last plate shows a small density on the left side. He received a total of twelve installations of gas.

H. M. Age 44. Diagnosed moderately advanced "B." Pneumonia at the age of 12. Bronchopneumonia six years ago. In 1919 was operated on for appendicitis. About the tenth day after operation he developed a cough, expectorated yellow, pussy material, with nigh sweats and irregular temperature. He continued in this condition for one month coughing and expectorating a great deal of foul yellow pus. He had chills, tired feeling. The amount of sputum daily was about 3 to 4 cups a day. Dullness on the right lower border of chest from 7th rib downward. Sputum negative for T. B. Urine negative. A mild degree of leucocytosis. Treatment with pneumothorax was started. He received a total of 6,250 c.c. of gas extending over a period of seven weeks. Patient discharged as recovered. X-ray reported the chest clear.

J. M. Age 26. Timekeeper. Past history negative. Influenza in 1917. Following this he had a dry cough, loss of weight, tired feeling, and a diagnosis of far advanced pulmonary tuberculosis was made by his private physician. On admission he was expectorating great amounts of foul smelling pus-like material. Club-

bing of fingers. Crackling rales over middle lobe on right side. X-ray showed a density of the right middle lobe. Diagnosed as lung abscess and treatment with artificial pneumothorax was started. He received a total of 5,900 c.c. of gas over a period of eleven weeks. During the treatment he developed a slight effusion, which cleared up gradually without interference. He made an uneventful recovery.

B. M. Age 46. Tonsillectomy in 1922 under general anesthesia. Prior to that time he was perfectly well. Ten days after his operation he was taken sick with cough and pains in his chest, and a diagnosis of pneumonia was made. Ever since he has continued to cough a great deal expectorating large amounts of pus. Chills and fever at times. Lost 20 lbs. in one year. Night sweats and pains in his chest at times. Mild dyspnea, occasional blood-streaked sputum, with clubbing of fingers. X-ray showed the right lung dense from the third to the seventh rib. Dullness over this area with cracked pot resonance. Sputum negative for T. B. Temperature ranges from 99 to 100. A number of attempts have been made to institute pneumothorax treatment but without success due to the extensive adhesions. He was advised to have surgical interference but this the patient refused. Discharged as unimproved.

R. Z. Age 17 years. Female. Has been in sanitariums for the last ten years. Diagnosed as empyema, tuberculosis and bronchiectasis at various times. History of pneumonia at the age of six and coughing continuously since then. She is well nourished. Has clubbing of fingers, foul odor on coughing and breaking up great quantities of pus during the day. She has had frequent acute exacerbations when she runs a temperature of 103 to 104 lasting 4 to 5 days. Dullness on the left side from 4th to 9th rib. X-ray showed a mass adjacent to the heart. Was seen by a number of surgeons and all refused to interfere due to the close proximity of the pericardium to the abscess. Pneumothorax was started and she is now under treatment. Has received a total of 3,400 c.c. of gas. Expectoration has almost completely disappeared. The last plate shows the extent of the abscess greatly diminished. While I do not hold out hope for a complete recovery, I feel that the improvement is very marked.

Summary. Lung abscess is a rather frequent disease and must be differentiated from pulmonary tuberculosis, the x-ray being a valuable aid in making the diagnosis. Pneumothorax is of great aid in all cases of lung abscess if started early. The chronic abscess does not respond well to pneumothorax. Here surgery should be tried. Simple resection with drainage is only a make shift and does not offer a permanent cure. Two of our cases have been draining for months and, although they are improved, further surgical interference will be necessary. I am not in a position to discuss lobectomies nor bronchoscopic treatment as it has not been used in any of our cases. The results obtained here by pneumothorax were by far the most satisfactory, and in selected cases should be tried first before undertaking extensive surgery.

LUNG ABSCESS—ANALYSIS OF 22 CASES

Etiologic Factors	
Tonsillectomy	7
Appendectomy	2
Measles	1
Pneumonia	2
Influenza	1
Bronchopneumonia	2
Unknown	7
Ages	
Range from 10 to 57 years of age.	
Sex	
Male	14
Female	8
Location	
Upper lobe right	6
Lower lobe right	5
Upper lobe left	3
Lower lobe left	1
More than one lobe right	3
More than one lobe left	4
Results of Treatment	
Pneumothorax: 6 cases	
Cured	2
Improved	3
Stationary	1
Thoracotomy and Draining: 4 cases	
Improved	2
Not improved	1
Deaths	1
Medical: 12 cases	
Cured	2
Improved	6
Stationary	4

DISCUSSION

DR. R. H. HAYES, Chicago, opening the discussion, said: In the treatment of pulmonary abscess I want to give you a word of caution. The location of the abscess must determine the line of treatment, together with the length of time that the individual has been affected with the abscess. In early cases of pulmonary abscess following acute infection such as pneumonia or foreign bodies, the abscess is usually very rapid in its formation. Again, just a few days or weeks may elapse after tonsillectomy before the first symptoms of pulmonary involvement begin, followed by abscess formation, due to aspiration of blood, tissue, etc. The infection may get into the lung as a secondary focus, by way of the blood stream or the lymph stream, then to the periphery or interior of the lung, where the abscess may be located.

Those of the first, or early type, are abscesses usually beginning in or near the root of the lung. If they are well within the substance of the lung, or well toward the middle part, you have a more difficult condition to deal with. If the abscess is shown to be near the periphery of the lung, we have a still more dangerous type. I will not discuss the surgical aspect of treatment, but will from the artificial pneumothorax standpoint. In giving artificial pneumothorax we must be guided by the length of time the individual has been affected, as well as the location of the abscess.

In the early stages in which we have an inflammatory or pneumonic condition existing with abscess draining, I believe from personal experience that artificial pneumothorax is absolutely against all precedent. We should wait and should treat these cases just the same as we do any pneumonia case. These cases do not as a rule go to rapid termination, but are persistent, the abscess beginning to subside rather

slowly, but progressively, and as a rule will rupture into the bronchus and the material be expressed. This type does remarkably well with artificial pneumothorax if the abscess is near the root of the lung. The type that usually expresses large quantities of putrid material is the type that forms near the root of the lung, and does not need artificial pneumothorax as a rule.

Now, the peripheral abscess. This is the type we get into trouble with. I have attended two. One was of only a few weeks' duration, persistent and with no evidence of draining. The x-ray findings were not conclusive as to exact location, and as the infiltration was dense in surrounding tissues, no definite walling off had occurred. Knowing the dangers, but with the solicitation of the doctor, I gave artificial pneumothorax. The abscess ruptured into the pleura and the patient died before drainage could be done. I learned then to be more cautious. The type with the peripheral involvement should not be given artificial pneumothorax, unless a definite time has elapsed to allow a firm wall to form. You are crowding upon densely infiltrated structures, and we have the weakest structures near the periphery, as natural drainage is toward the hylum. If you attempt to puncture the pleura, especially in marked involvement where there is a plastic pleurisy usually existing, you are many times more apt to go into the lung than you are in tuberculosis. The x-ray must be your guide as to your procedure.

In the early onset of the abscess, proper symptomatic treatment must prevail and precede artificial pneumothorax. Open operations and drainage must be considered, but as I have already suggested most of these abscesses will rupture into the bronchi and the contents be expressed. It is in these cases where there is little chance for the material to be expressed, if the abscess persists for several weeks with very little prospect of emptying itself, and the x-ray shows the position of the abscess with more or less dense tissues surrounding it, which must be your guide as to the safety of artificial pneumothorax, with the amount of gas, and the general character of your treatment.

Never attempt to give gas early in deep seated abscesses, but wait and allow definite peripheral walling off to occur, then the slow administration of small quantities of gas will eventually collapse the lung and allow the material to be expressed, with the final result of the formation of fibrous tissue and obliteration of the abscess cavity, or nearly so.

DR. DON DEAL, Springfield, said: I just want to make two points. First: a direct lateral x-ray is of great value in the diagnosis of lung abscess. In fact it is just as important as two views of a fracture.

The second point is along the radical treatment of these cases. Up to this time in lobectomy the mortality rate has run as high as 50 per cent. Lillianthal reports thirty cases with 50 per cent.

Drs. Palmer, Cole and myself two years ago worked out a techinque which I think will reduce mortality to 10 per cent. or less. We feel that the proposition is going to revolutionize chest surgery, that it is going to improve the technique and improve the results. It is peculiar that through all the war surgery, and the experience since, no one has thought of this simple method.

The shock that is received, the terrible percentage of mortality, has always been attributed to pleural shock, it is nothing but the sudden change of pressure. So if we can get around that, if we do a preliminary pneumothorax, gradually building up to atmospheric pressure, or better than atmospheric pressure, at the time one operates we will not have the sudden collapse. The patient will be acclimated to the change of pressure. You will not have mortality, you will not have the sharp increase of pulse, you will not have the elevation of temperature. The pallor and shock will not occur. We have had cases operated on which have not had as much reaction as we have in the average lobectomy. So we think that with the preliminary pneumothorax the mortality will be decreased, it will relieve a lot of worrying and do away with special pressure apparatus.

DR. HERMON H. COLE, Springfield, said: I would like to ask the doctor a few questions about this condition. I think this is one of the most interesting subjects in the whole field of medicine.

In the first place, what about the sputum condition? Did you work out the bacteriology of these cases and find what the infecting germ was?

Second: How great a collapse was instituted? Did you aim at a complete pneumothorax or were you satisfied with a partial?

A third point I think is of great interest in the percentage of failures which one will get in these cases on account of adhesions. Most of these lung abscesses, if they are of long standing, six months or more, sometimes much earlier than that, will have extensive adhesions, and pneumothorax is impossible.

Another question is, whether the upper lobe or lower lobe is the most favorable to collapse. Is the upper lobe more favorable than the lower?

Another thing I think is important is the fact that a pneumothorax in the lung abscess should not be used unless there is drainage by way of a bronchus. To do so is contrary to surgical principles. I think unless you have the drainage tube already established we should not use pneumothorax.

It is well to remember also that artificial pneumothorax can be used advantageously as a preliminary to other intrathoracic manipulations, as Dr. Deal and I have demonstrated here. By a preliminary collapse we have found it possible to avoid most of the shock incident to opening the chest.

This holds in lobectomy, for bullet wounds of the chest, foreign bodies and a number of other conditions. In the cases we have had, the value of preliminary pneumothorax was unquestionable, and we feel we have something that is rather valuable in this connection.

DR. H. B. BOONE, Chandlerville: Did you ever have the experience of the rupture of these abscesses, and what was the condition of the patient following rupture of the abscess?

DR. P. S. WINNER, Chicago: As far as answer-

ing the question about rupture of the abscess, do you mean rupture into the bronchus?

DR. BOONE: Yes.

DR. P. S. WINNER, Chicago, closing the discussion, said: As I mentioned, one child following tonsillectomy, had a rupture of the abscess in the bronchus, with rather prompt recovery in a few days. The cases I have seen have all been of the bronchus type. I have not seen the encapsulated type which has been mentioned. I agree with the doctor who said that is not a case for the pneumothorax treatment.

We worked out the sputum findings in a number of cases. The findings were rather indefinite. I say indefinite in that we had numerous contradictory reports Streptococcus was reported in one case; the others were mixed infections. We had a number of cases where we were in doubt. I am not satisfied as to the sputum findings in all cases. That is, they are not alike.

As to complete collapse, I would say I find that complete collapse is indicated in all cases.

I am very much interested to know that you have done work with pneumothorax prior to lung operation. I was just wondering what you would do in cases where you can't get in to do pneumothorax. I have had a number of cases where I tried ten or twelve times and failed to get in. Those are the cases, of course, that are going to be a problem. I know that Graham of St. Louis has done considerable work in lung abscess, good work, and I think the mortality he states is 30 per cent.

I was interested in one case Dr. Hayes mentioned. What happened to the patient? Did the rupture go into the lung or the pleural covering? What happened in that particular case? I do not agree with Dr. Hayes in saying we should wait in our lung abscess cases. The most striking case I had was a little girl, ten years of age, brought to me ten months following tonsillectomy. I am sure if pneumothorax had been given early in her case we would not have a chronic condition. Now, the girl is draining satisfactorily, of course, but I think we are going to have a chronic condition there to deal with later on.

INFECTION, AND ITS RELATION TO GENERAL AND LOCAL DISEASE*

CHARLES H. MAYO, M.D.
ROCHESTER, MINNESOTA

The progress of civilization has been rapid within the last few thousand years of the long period of man's life in the world. Whereas in the past, advances and regressions by reactions required hundreds of years for the cycles they are now made in decades.

Hippocrates mentioned the fact that some recurring diseases affected persons having another chronic disease area, which if removed, also cured the recurrent disease. Benjamin Rush, in 1800, in discussing the same conditions, reported cure of such disease by the extraction of a diseased tooth.

With constantly accumulating knowledge at the command of the many, the mass destroyers of life have been controlled and almost eradicated by the destruction of insect and animal carriers of disease, by the control of human carriers, by quarantine of diseased persons, by vaccination and by serum inoculation to raise the threshold of body resistance to the infective microbe, thus increasing the ordinary quantity required of the infective agent manyfold, and usually far above that of ordinary contact exposure or that obtained in food and drink. Our domestic animals are also thus protected, and our country saved from the great economic losses sustained in the past.

Such principles of disease prevention were laid down by Jenner in vaccination against smallpox.

The great world benefactor, Pasteur, showed scientifically why and how disease was transmitted, and the rationale of its prevention in plants and animals as well as in men.

The various disease organisms have nearly all been identified, their action proved, and thus controlled by experimental animal research.

Billings gave a fresh impetus to the study of the disease which impaired man's usefulness or caused his death, rarely quickly, but slowly and surely, from neglect of small matters pertaining to health. Local infections were known to exist, but considered of little importance by physicians and the public. Often such areas of disease are not recognized because painless and invisible, and they are of such common occurrence that they are not appreciated. It is most difficult to sustain the interest even of those who are suffering during this decade, when a period of reaction is occurring. When this is over advance will again be made beyond proved ground: the ebb and flow of the tide of progress.

In the field of general medicine the greater dependence on laboratories has reduced the power of observation, while in the field of dentistry there is more to be seen relating to acute and chronic disease than elsewhere. The serious infections and contagious diseases of the world, destroyers of human life in mass, have now

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wisconsin, October, 1924.

almost disappeared through knowledge of their cause and prevention. By paying more attention to the prevention of diseases which destroyed the lives of babies and children, as well as those of older persons, we have advanced the average lifetime of man to fifty-eight years. Now man is dying an individual death; few of those who should know, and almost none of the public, seem to appreciate the fact that sickness and death from acute or chronic infections (those bacterially caused) account for 87 per cent of all deaths.

One-third of our young men from twenty-one to thirty-one years of age were wholly disabled for war duty, as shown by the draft: 7,000,000 were examined but only 4,500,000 were accepted, and 47 per cent of the latter had defects worthy of recording. The diseases and disabilities of the majority of those rejected were largely owing to the lack of knowledge of parents, or whole communities with regard to disease, its cause, and prevention.

The hardening of blood vessels; the changes in many chronic brain lesions; disseminated sclerosis of the spinal cord; chronic nephritis; stones in the kidney, ureter and bladder; the recurring rheumatism of muscles and joints, large and small; the chronic recurring diseases of the eye; iritis, retinal and choroidal troubles, and neuritis, are some of the more common diseases which we now know to be due to infection. Investigation has proved that those who suffer from such diseases carry a focus which, with varying degrees of health, exhaustion or even climatic changes, may afford an opportunity for the bacteria to be thrown into the blood stream and create a recurrence of those diseases which, in the past, were treated as entities, primary, not secondary, as we now consider them. The greater percentage of such infective foci are in the mouth; small, closed alveolar marginal pockets, abscesses at the roots of dead teeth, and devitalized and crowned teeth, all afford opportunities for infection leading to an early break in health. They may locate in the heart and thus add to the high and still growing death rate from heart disease: 150 deaths occurring from this cause each year in 100,000 in this country and usually without warning. Fortunate indeed are they who have the secondary foci in a nerve, as neuritis, or in a muscle, as muscular rheumatism, so that time and opportunity may be afforded for investigation.

Only a very few old persons have fully preserved teeth; in fact most of them have lost their teeth and have worn plates since the fifth decade of life. A dead nerve in a tooth will prevent appreciable local reaction, and although possibly enabling its possessor to eat better for a time he is conducting his health on borrowed capital, as he may not have a physician or a dentist who will appreciate that the sickness or broken health which may develop is due to such an apparently trivial cause.

We ask much of the x-ray in the investigation of teeth and jaws. The infecting substance may present a shadow so small that even in a tooth known to be infected it does not show, or it may be lost in the range of the shadow of the tooth itself. By those who understand the reading of plates much may be ascertained from nature's handling of calcium in comparing bone conditions of the two sides of the jaws, and with other infected teeth; the condensing or rarification indicates nature's type of defence against infection by walling off an infected area or increasing its blood supply after the removal of the calcium. Camparatively few physicians understand the reading of such plates. The condition of the teeth then means much to the one who is searching for the focus of infection and type of tissue reaction, also to persons now comparatively well who may in the future develop a variety of diseases which destroy health and happiness, if not life. Because the secondary lesion is not recognized the dangers of focal infection are discredited until too late, in cardiac, renal and vascular diseases.

The tonsils, as a rule, carry the same organism as that which causes the loss of teeth, each individual probably having his own specific organism which may be wholly different from that of his neighbor or other members of his family. For example, mine is the *Streptococcus viridans;* others may have *Streptococcus hemolyticus,* as well as other varieties of the green-producing streptococci. Such organisms may have an affinity for almost any tissue in the body, and by not cleaning up focal infections to-day persons are neglecting themselves until such time as they are again laid up with troubles of known or unknown cause, and are dependent on the interest dentists and physicians may take in the investiga-

tion of the cause. If one case is erroneously considered the result of focal infection due to bad teeth, regardless of the condition of the teeth, and if they are removed without relief of the secondary disease, it discredits the theory of focal infection and its elimination, with all who know the patient and with the dentists and the physicians concerned. In many cases the tonsils have not been eliminated, or there has been no x-ray examination of the jaws and teeth, local evidence being depended on to instigate special examination.

With regard to infection of the tonsils, consultation with the throat specialist may leave the condition still worse, as he might consider that the small tonsil, size 1 or 2, gave no evidence of disease, even if the history indicated that the patient had had many attacks of tonsillitis in early life. For tonsils graded 3 and 4, large because of reaction against infected pockets within them, the specialist would recommend removal, although their size and reaction then usually confers immunity against their causing focal diseases at a distant point. Small tonsils with small pin-head abscesses carry as much infection as would several teeth with root abscesses.

Besides in the teeth and tonsils, infection should be looked for in the prostate and seminal vesicles, and in the cervix uteri, especially the glandular areas behind the cervical lining. In these areas there are usually various types of streptococci which cause the rheumatism of the small joints, and the myocardial and renal infections. In young men they also account for rheumatism of the large joints, being then due to gonococci and associated bacteria. Why are some persons more susceptible than others? The susceptibility is an inheritance, the amount of resistance being due to the mineral content of the blood. There are but fourteen of the ninety-two elements that make up the world which are carried in the blood in almost an exact quantity, sustaining, replenishing and rebuilding in health. At some period in the life of all persons there comes a break in the absolute stability of one or more minerals which changes the resistance of the blood, and makes them susceptible to disease germs. Blood tests will show these changes, and if we desire to know the danger of foci that we carry with us, they may be inoculated into animals, and by their selective affinity for the different tissues of the body will show quite definitely where our danger lies.

A study of the calcium in the world shows that the great bulk of lime and its principal compound are formed by cell life from calcium in solution. A small amount is combined in other ways as by crystallization. Limestone has been formed by bacteria since the Cambrian period of the world's history. Calcium compounds are now being formed in the sea in the same way as in past ages by the most common and numerous sea bacteria known. In 1915 I predicted that it would be found that stones in the kidney and bladder, like pearls in mollusks, were formed by microbic action.

In 1922, Rosenow and Meisser were able to produce stone in the kidneys of dogs by creating root abscesses of their bicuspid teeth with streptococci from the urine, teeth and tonsils of patients with stones in the kidney. Under anesthesia the dogs' teeth were ground to expose the pulp which was removed with the root nerves, the streptococci were then placed in the cavity and the teeth crowned or filled. Calculi, or calcium lesions in the kidney were thus produced in 87 per cent of the dogs infected from nine patients with stone in the kidney. During this research other infections of the kidneys were developed and lesions bacterially produced which simulated the acute and chronic renal diseases of man.

DIATHERMY IN MEDICINE AND SURGERY*

DISRAELI KOBAK, M. D.
Attending Physiotherapist, Cook County Hospital,
CHICAGO

The value of diathermy as a therapeutic agent was not fully realized by the medical profession until the World War demonstrated its wide scope of usefulness on a large scale. It will be recalled that from 1918 to 1920 over one million diathermic treatments were administered in the military and reconstruction hospitals. This one fact taken from official records serves to show the confidence in that agency by our government, a confidence which is justified by the curative results.

It is no exaggeration to say that diathermy has contributed immeasurably toward the restoration

*Read at the December meeting of the Peoria Medical Society.

of otherwise hopeless cripples and invalids to lives of usefulness.

Naturally these weighty lessons have made a deep impression on many clinicians in civil practice of medicine and surgery. In spite of these advances, however, diathermy has not yet become as popular in the profession as it merits, and many practitioners of medicine maintain confused ideas regarding its characteristics and properties. It may, therefore, not be amiss to discuss at length the definition, physics and physiology, and applicability to disease of diathermy.

Electrophysiology teaches that an electric current of high frequency passing through living tissue generates a certain degree of heat, dependent upon and in proportion to the resistance offered by the tissue, and that the heat thus generated is the result of a transformation of electric into caloric energy within the tissues. The word *diathermy* is derived from two Greek words, means to "heat through," and is the accepted term for the method of localizing or directing varying degrees of temperature within the tissues of the body by a current of high frequency. Professor Zimmern of Paris defines diathermy as a form of thermo-therapy which utilizes electric energy for the production of thermal effects in the depths of the tissues. This, however, is merely stating a half truth, for conductive heat by a hot water bottle or radiant heat form an incandescent lamp also conveys heat to depths of tissue, by virtue of an active circulation carrying away the excess heat from the skin surface into the greater depths of the body in general. Such form of heat, however, is usually desseminated instead of localized. Medical diathermy as contrasted with surgical diathermy means the heating through of parts of the body, or the establishment of a local pyrexia, within any desired depth of the body, to a degree insufficient to destroy the tissues or impair their vitality.

Historical Sketch.—While high frequency currents have been the subject of research for many years, they were not considered of any importance in medicine until D'Arsonval, in 1890, repeating certain experiments of Ward on alternating and sinusoidal currents, showed that currents having an alternating frequency higher than 5,000 oscillations per second, diminished contractile impulses in excitable tissue. This research hardly produced a ripple upon the medical firmament until Nikola Tesla in 1891 demonstrated that by using rapid oscillatory discharges from the Leyden jars, larger currents of high potential could be passed through the human body without any untoward or painful effects, and that heat was the concomitant effect of these currents.

In February, 1891, D'Arsonval first used high frequency currents—now called diathermy—to traverse the human body, and in a communication to the Societé de Biologie stated that he had passed 3,000 mr. of current through himself without any sensation other than that of heat. Subsequently, in 1898, D'Arsonval showed that high frequency current could modify some of the physiological processes of the body. His conclusions, drawn from ten years of investigation, proved that currents of high frequency raised the respiratory exchange, stimulated the output of heat, caused peripheral and vaso-dilation and sometimes lowered arterial blood pressure, and increased the nitrogenous bodies and phosphate in the urine.

German scientists were quick to appreciate the possibilities of D'Arsonval's researches, and became very active in carrying investigations a step forward. In 1897 Franz Nagelschmidt, of Berlin, demonstrated that high frequency currents produced a heating through of tissues and recommended this treatment, which he named "diathermy," for articular and circulatory disturbances. In 1898 the same author, at a congress in Budapest, presented a diathermy apparatus designed by himself, which produced greater heating qualities than the older model of D'Arsonval. In a conjoint paper published by Von Berend, Von Preiss and Von Zyneck, in February, 1908, on the treatment of joint diseases by high frequency currents, these authors laid stress on the production of heat penetration as the important part of the action of the current. In 1909, Sir Lewis Jones established diathermy as an important adjunct to the other specialties in St. Bartholomew's Hospital in London. The recognition given to this modality in that hospital was no doubt due to the scientific investigation of the physiological action of diathermy on diseased structures by Jones, and independently by Elkin Cumberbatch. In America, the spread of physiotherapy was sporadic and scattered; while scientific investigation of diathermy was carried on by a negligible

few. However, the work of DeKraft on the physiological action of the high frequency current compels dignified recognition. The publication of the postbellum experiences of Colonel Granger and Major Christopher Sampson has placed diathermy in the front rank of medicine as a scientific adjunct of modern medical therapeutics. From a purely mechanical viewpoint mention must be made of the reduction of the various types of apparatus from ponderable, noisy types, to the flexible, mobile, silent appliances of today. The innovation of the new spark gap represents an improvement over the older types of diathermy apparatus, possessing greater effectiveness and flexibility.

Physics of High Frequency Currents.—A brief exposition of the physics of currents of high frequency together with the necessary steps in its evolution, is of importance to every physician interested in diathermy. When an ordinary low frequency current of 110 or 220 volts, alternating type, is actively connected to an iron core that contains opposite insulated wiring, the secondary windings being numerically in excess of the primary, an induced electro-magnetic field occurs, and the current is thus stepped up to an enormous voltage. This is known as the primary transformer, which carries powerful voltage, although the frequency or oscillations are as yet unchanged. A current of this type would traumatize muscles and nerves, fracture bones and endanger life. To overcome this danger, the wires of the secondary winding are formed into a circuit that includes a spark gap, Leyden jar condensers, and the primary of a secondary coil of wires known as the D'Arsonval, Tesla or Oudin current. Thus, while the first step in the transformation of a low frequency current is a raise of voltage, the second step is an increase in frequency, for this important step must be accomplished before the current is safe for use. The spark gap and the condensers acting in the capacity of storage and a frequency step up, by virtue of its limited holding capacity, perforce must soon discharge its contents into conductors or wires of lower resistance. This coil of wires is the true D'Arsonval circuit from which the current from the condensers flows to and from the spark gap, while the resistance or damping effect met at the spark gap, again fills the empty condensers. The product of this activity of the filling and emptying of the condensers, and the resistance encountered at the spark gap, is the establishment of an oscillating alternating current of a frequency of about 1-2½ million oscillations per second. Through these steps we satisfy voltage or pressure in order to create high oscillating frequencies, which produce amperage or heat without pain or trauma. If the Tesla or Oudin current is to be used, a third step is necessary, and that is to raise the voltage a second time; although the frequency is not changed, the amperage in order to satisfy the law of energetics, goes down as the voltage goes up. A D'Arsonval current maintains high amperage or heat, and relatively low voltage, and the Tesla-Oudin current maintains high voltage and comparatively low amperage, or heat.

We have already mentioned that diathermy is synonymous with a high frequency current, *i. e.*, a current which changes its alternations or oscillations or frequency about one million times per second. In order to place heat within certain regions of the body, one must first overcome the tremendous resistance of the skin, which entails a current of gigantic strength or voltage, and at the same time maintain a current of lowest stimulation to excitable or contractile tissue. Thus the high frequency current, accidently discovered by D'Arsoncal, as described above, ideally fits the condition, for it is a current of high voltage and heat or amperage, and contains the high oscillating frequencies that sedates all excitable tissues.

Physiologic Effects of Diathermy.—Those who have investigated the physiologic effects of diathermy are agreed that this energy penetration first manifests itself as converted heat, and that this heat is endogenous in character and variable in intensity according to the size of the active electrode. We hold with Weyth that the term "endothermy" offers a better explanation of the activity of the high frequency current within the tissues than that of "diathermy." The heat thus created, whether due to the resistance of the tissues offered to the penetration of the high oscillating current, or to Turrell's conception of the hydrogen ion concentration accompanied by an intercellular friction resulting from the oscillations of the high frequency current, is productive of still further physiologic changes. The immediate effect is a transitory stimulation of the nervi nervorum, followed by a quickened arterial and capillary circulation

and a vaso-dilatation of the blood and lymph vessels. This is followed by an enriched vascularity between the poles, which also results in an effusion of serum into the extravascular spaces, a stimulation of phagocytosis and a concomitant sedation of the treated part.

Pain is relieved by the analgesic quality of heat upon the nerve endings, toxins are removed by the efferent blood and lymph stream, and the treated part is materially enriched and softened by increased circulation. The bactericidal effects of the physiologic heat within the tissue was demonstrated in the recent literature, from which we learn that the thermic dose lethal to bacteria is in no way detrimental to the structures treated.

DeKraft in his studies of the physical effects of diathermy on the body, says that "congestion, wherever present, is relieved because of the marked activity of the internal circulation. Anemia of the splanchnic area ensues. Visceral congestion is relieved. The liver, the intestines and other organs within the abdominal cavity are made to disgorge the stagnant pools of blood which bathe their structure. When the action of the diathermic current has subsided and the blood stream returns again to its normal channels, freshly oxygenated arterial blood enters in great abundance into the previously anemic and (before the heating) venously congested areas. The parts are placed in a better state of defense against the invasion of toxins and bacterial colonies."

Réchou, in *Archiv. de Elect. Med.*, March 10, 1913, quoted by Cumberbatch, investigating the influence of diathermy on the respiratory exchange during and after diathermic seances, concludes that "the patient gave off less carbon dioxide, and consumed less oxygen after thirty minutes of diathermy. At the beginning of the treatment the oxygen intake and the carbon dioxide output both increased. Before the diathermy, the oxygen consumed (during ten minutes) was 2.95 liters. At the beginning of diathermy the oxygen consumption was 3.63 liters, but after the diathermy had lasted for thirty minutes, it fell to 2.14 liters. The figures for the carbon dioxide output were—before diathermy, 2.62 liters; the beginning of diathermy, 3.16 liters, after thirty minutes diathermy, 1.96 liters." The final effect of diathermy, therefore, was to spare the thermogenic mechanism of the body; less heat was formed within, as more was supplied from without. Diathermy could also replace part of the food required, by its caloric value, and hence rest the digestive apparatus. The same author found a considerable amount of acetone in the urine of stout patients after diathermic application. This, he says, is possibly due to liquefaction of fat, the excess in the blood being incompletely used up.

Nagelschmidt found diathermy to have a stimulating effect upon human cells and glands.

According to Bergonie, general diathermy i. e. auto condensation in elderly people suffering from hypothermy or a state of "Misère physiologique," or in conditions of inanition, is followed by improvement in appetite and general health. Digestion improves and weight is increased. The soothing effect upon the nervous system promotes sleep and a general feeling of well-being.

Studies of the influence of diathermy on metabolism and blood pressure have demonstrated to the writer as well as to other investigators, that diathermy applications over the entire body, in the form of autocondensation, increased the elimination of total solids in the urine, had a pronounced effect on the blood pressure and the pulse rate, lowering the pressure temporarily or permanently, according to the nature of the condition, and increasing the pulse rate during treatment. The respiratory movements were increased in amplitude and rate. Artificial general pyrexia resulting from an autocondensation treatment differs from ordinary pyrexia in that it is not produced by toxins circulating in the blood, and, while the thermogenic centers are spared during the treatment, the heat regulating mechanism quickly eliminates the excess of heat and the temperature returns to normal with added benefits from such treatments. Thus diathermy relieves pain, sedates the affected part, removes toxic waste products by virtue of a hyperactive circulation and carries with it bactericidal and metabolic potentialities.

Amongst circulatory disturbances one of the most distressing complaints is that condition known as angina pectoris. The value of the heat penetration from diathermy upon the sclerotic coronary arteries and the heart musculature is evidenced by an immediate cessation of the spasm or pain. The oppressive restlessness and the feeling of anguish cease after a few minutes of the

treatment. This is a spectacular demonstration of the value of diathermy because the distressing symptoms are greatly relieved with the first application. If, however, prompt relief is not obtained, it is reasonable to assume that we are dealing with an aneurism or a grave myocarditis.

Recent literature has further evidenced the indication of diathermy in such conditions as chronic bronchitis, the asthmas, and in particular, the pneumonias. Stewart of Yale cites the value of diathermy as fairly specific in the treatment of pneumonia. Every case thus treated by him recovered by lysis, while the mortality in his series of 120 cases was somewhere around 7 per cent. In the face of the usual heavy mortality in the larger hospitals, the early treatment of pneumonia by diathermy presents a good prognostic outlook.

In sciatica and brachial neuritis, my experience in private practice and at the Cook County Hospital, has been unusually satisfactory despite the divided opinions of foreign authorities. In a recent series of eleven cases of subacute and chronic types, ten have obtained relief from all symptoms. My odd failure can be attributed largely to a friendly regard for the patient, a factor which definitely interfered with regular unbiased treatment. This patient, an active member of the bar, satisfied with temporary relief, gave only spasmodic attention to his ailment. Diathermy is a most valuable aid in maintaining the nutrition of the affected nerve and is therefore an important adjunct to other forms of therapy.

Before instituting treatment of any sort in sciatica and brachial neuritis, obviously one must first of all make sure of the diagnosis. Focal infections both of entrance and exit must be duly considered and eradicated. Orthodox, conservative medication must be included in the treatment whenever indicated. Active daily diathermy is given over the exit of the nerve in the following manner: a 2x5 mesh or tin electrode is placed over the lower cervical and upper dorsal spine and a large cuff electrode is wound over the middle portion of the arm on the affected side. In this manner the patient derives the maximum benefit from the physiologic heat as already described. For sciatica the active electrode, size 2x8, is placed over the lumbar region and a large indifferent electrode, 8x10, is placed opposite, over the abdomen. The heat to either spine should be comfortably warm, or one may gauge the amperage from the meter, which should register 800-1000 in the former and 1000-1200 in the latter. After the parts are diathermized for twenty or thirty minutes, the sinusoidal current is connected to the same electrode for five or ten minutes. This current, acting in the capacity of a molecular massage, further helps in decongesting the involved area. It is seldom necessary to resort to minute doses of x-ray in these conditions except in cases of long standing. The action of ionizing doses of x-ray in indolent conditions has been scientifically established by Major Sampson in the reconstruction hospitals in the east. That it is a definite synergist in the chronic types of neuritis is manifested by the beneficial results that follow these treatments.

Inflamation and Degeneration of Muscles. In acute myositis, whether traumatic or rheumatic in origin, diathermizing the affected part with parallel or lateral plates gives the quickest results. Lateral or longitudinal plating carries the heat more superficially and by conduction; hence it reaches the inflamed structures more readily. The dosage in M. A. depends as usual upon the size of the electrodes and the sensitivity of the patient. Anesthetic parts should receive due care and consideration.

Torticollis or wry neck of the muscular or neurotic type in the acute stage practically yields with the first treatment of a combination of radiant light followed by diathermy. The technic which has found most favor in my service is: a semi-circular strip of metal over the unaffected side of the neck and a larger and similar strip of metal over the acromial and on the effected side. The conversive and radiant heat sedates and relieves the muscular spasm.

On the other hand, the chronic and paralytic types yield more slowly, but very definitely, to the combined measures of diathermy, negative surging galvanism and weekly ionizing x-ray treatments to the affected parts. In these latter types it is a question of prolonged muscle education of the sternomastoid trapezius and the deep posterior cervicals. The fibrolytic action of the ionizing doses of x-ray, the maintenance of nutrition by diathermy plus the softening and stimulating action of surging negative galvanism, are the methods of choice.

Lumbago, now regarded as a hypertonic state of the lumbar muscles due to the presence of

toxins or myosin crystals, readily yields to the conversive heat of diathermy, and the static Morton wave or sine current or the counter-irritating sparks of the non-vacuum or vacuum glass condensers. We personally prefer the non-vacuum type for its deeper penetrating powers if we are to use the glass condensers. By diathermizing the affected region with antero-posterior plates to the point of about 1500 M. A. for thirty minutes, followed by sine or Morton wave, the results are fairly startling in its beneficial effects. There are, perhaps, few conditions which enable a physiotherapist to impress his patient so quickly with the curative power of electricity as that of lumbago.

Injuries of Joints, Sprains and Strains. In sprains or strains of muscle of the joints of the long bones, the value of physiotherapy can be quickly demonstrated. Ruling out the question of fracture by x-ray, the method of choice is diathermy via the cuff technique. The cuff method should be the one of preference because the nature of the injury is primarily one of soft tissue trauma, with a secondary involvement of the capsule and cartilage. By using cuffs the diameter of which is one-half the thickness of the injured part, we insure superficial as well as depth penetration, throughout the traumatized parts, and an equalization of heat between the electrodes. Furthermore, the decompressor action of conversive heat stimulates and acts upon the afferent circulation to remove the increasing effusion of the part as well as to relax the musculature and to sedate the local nerve injury. In association and following the diathermy treatment immediate application of the rapid surging sinusoidal current—or the static machine with the Morton wave is of utmost importance. The well-known compressor and contractile qualities of the foregoing rhythmic currents tends to remove the extravasated fluid and swelling, and to tone up the injured parts. Progressively the pain, swelling, numbness and stiffness, which are the cardinal symptoms of this condition, will disappear in direct ratio to the rapidity with which treatment is instituted. Moreover, the customary troublesome sequellae of organized adhesions, fibrosis or ankylosis will be nullified to a negligible degree. A word of caution may also be added in the treatment of sprains; although the pain and swelling may have disappeared within a week or less, it is advisable to consider the injury as undergoing a period of convalescence in that the limb should be guarded against undue or excessive activity for at least a period of two to three weeks.

Arthritis. Contrary to the usual laudatory opinions of many physiotherapists regarding their results obtained in cases of arthritis, ours have been variable from extreme satisfaction to keen disappointment. While in all of the arthritides electrotherapeutic measures offer immediate alleviation of the symptoms, experience has taught us that the relief in the toxic types is merely transitory.

The migratory tendency in the subacute toxic type does not lend itself to an early eradication of all symptoms with diathermy unless used in conjunction with other measures, such as removal of focal infective points, proper diet and complete elimination either by drugs or other methods. Each treatment, however, temporarily relieves the painful parts and the patient acknowledges beneficial effects.

It is with a sense of satisfaction that we can attest to permanent relief in the arthritides of the Neisserian type. Heretofore, arthritis following specific infection has been the bane of the urologist. This type tends to prolonged chronicity, and patients so afflicted finally drift to the doors of the charlatans.

Diathermy is a potent remedy in gonococcal arthritis when applied alternately over the prostate and to the affected joint. Raising and holding the degree of heat within the peri-prostatic and the peri-articular tissues from 105 to 114 degrees F. is of utmost importance, for the diplococcus is definitely destroyed by this heat. The inflamed tissues themselves are concommitantly benefited and the patient recovers speedily.

Traumatic Arthritis. Some of the best results yielded by electrotherapy are obtained in traumatic arthritis with the combined method of diathermy and the surging wave current. Chlorine ionization has found its best and most enthusiastic advocates in France and England. Its usefulness in fibrositic joints and scar tissue has been brilliantly demonstrated in the late war, especially by Leduc of France. His research work in the field of ionization is now classic literature. The polar effects of the continuous current carry many possibilities, not only in chronic arthritis, but also in many of our specialties. I mention the successful treatment of otorrhea with ionization as an example.

In osteomyelitis following the removal of the sequestrum, and the establishment of drainage, combined use of diathermy by the plate method, alternated with the air cooled actinic lamp, is practically specific. We have observed many cases, which have come to our service with the poorest prognosis, get well under this combined therapy. It is also surprising with what certainty function is re-established, regardless of what the prognosis has been at the outset.

Surgical Diathermy

From an historical standpoint, surgical diathermy came into active use a decade earlier than medical diathermy. Reviere of France first reported the use of the high frequency currents in malignant neoplasms by the arc or sparking method, in 1900, at the Congress of Electrology and Radiology held in Paris. He claimed distinct improvement in late carcinoma with the high frequency Arc. In 1907 the distinguished gynecologist, Pozzi, reported to the Academy of Medicine of Paris, the cure of superficial and even of some deep-seated cancers by the action of the so-called Oudin sparks. Franz Nagelschmidt, following the technic of Pozzi, confirmed the latter's experience that distant sparking, or fulguration, merely carbonized the tissues superficially.

It remained for the brilliant surgeon, Eugene Doyen, of Paris, in 1907-10, to demonstrate the proper application and the true effects of the electrothermic current. In the main, his technic was similar to that used to-day, "Electrocoagulation" is a word of his coinage. For the perfected technic and the main researches in the field of surgery with the high frequency current, we are deeply indebted to William L. Clark, of Philadelphia. Possibly, no man's word carries greater authority in this specialty than his. "Electrodessication" is distinctly his offsdring, both as to word and technic.

Sound fundamentals plus experience, established that the high frequency current was an important modality in surgery. Its utility is ideally demonstrated in accessible neoplasms, whether malignant or benign. Electrocoagulation and dessication are the two principal methods used; the first, depending upon a very high amperage and relatively low voltage, and the latter, upon a very high voltage and a relatively low amperage.

Electrocoagulation is a bipolar technic with the active electrode in intimate contact with the neoplasm and a metered D'Arsonval current to measure the necessary amperage. Electrodessication is a unipolar application which does not require a metered reading, because it is dependent upon an extremely low amperage current.

In coagulation, the destructive or surgical effect is obtained by the amperage converted into destructive heat within the neighborhood of a small button-like or needle-point electrode. The intense heat coagulates the protoplasmic and cellular structures, "cooking" the tissues within the vicinity of the active pole. On the other hand, the dessicating effect of the monopolar current leaves the treated tissues in a dehydrated state, microsopically resembling a state of mummification or dry gangrene.

A. C. Geyser, in an address before the Medico Physical Society in September, 1924, quoted the following findings with reference to the value of heat in the destruction of malignant cells:

"In the third report of the Imperial Cancer Committee (1908) Haalan, at the suggestion of Ehrlich, undertook some tests with heat upon cancer tissue intended for inoculation. The result was that when such tissue was heated for thirty minutes to 111.2 F., the tissue was no longer viable when transplanted. . . . Jenson repeated an experiment, and in the annual report of the New York Cancer Laboratory, 1910, shows that all cancer cells die when heated to 116.6 F. for thirty minutes; Loeb found that sarcoma cells died when exposed to a temperature of 113 degrees F. for thirty minutes; Vedal showed that nearly all tumor growth was arrested with a continuous temperature of 104 degrees F.; Lambert, in 1912, pointed out the relationship that exists between the degree of heat and the time of action on malignant as well as on normal cells. . . ."

Clark, Asnis and Morgan, in their histopathological studies of the currents under discussion, state that "Electrodesiccation shows a drying up of the cells without any preliminary degenerative changes. The heat generated in the tissues causes an evaporation of the fluid portion of the cells; hence their shrunken mummified appearance. The cell protoplasm is condensed, rather disintegrated, thus the resulting fibrous tissue is less abundant and less dense and contractile."

It was also demonstrated by microscopic studies that "where the intensity of the heat is increased, we have, in addition to the drying ef-

fect, a coagulation of the protoplasm with a proportionate increase in trauma of the cell elements. We find, in consequence, a resulting increase in fibrous connective tissue formation" and in degree less scarification by desiccation than by coagulation. This is an important point to bear in mind when the choice of methods is under consideration, especially with reference to surgery of the face.

According to Clark, desiccation is of advantage when the lesion is localized or good cosmetic effect desired. Desiccation is subject to such fine control that even corneal ulcers may be successfully treated. Growths on the vocal cords can be destroyed without impairing phonation.

In proctology, fissures, ulcers, hemorrhoids, etc., yield promptly to the dehydrating effects of this current. In fact, desiccation and coagulation are the methods *par excellence* in all accessible, benign and malignant surgical lesions involving cutaneous surfaces, mucous orifices and osseous structures.

Some of the benign conditions suitable for treatment with the foregoing methods are papillomas, fibromas, lipomas, sebaceous cysts, simple or pigmented moles, nevi, tattoo and powder marks, angiomas, lupus, chancroids of the fulminating type, tuberculous or other ulcers, leukoplakia, erosions of the uterine cervix, Padget's disease, chondromas, exostosis, pterygium, leukoma and surgical tonsils in adults.

The small accessible malignant neoplasms of the basal or squamous cell type yield very readily to desiccation. Under local anesthesia, epithelioma of the face is brushed or sparked over with an ordinary sewing needle attached to a suitable handle and a foot switch. The growth becomes dry, hard and horny in texture, in the space of a few minutes. After the lesion has healed, it is advisable to follow with a prophylactic dose of x-ray. The cosmetic effect is excellent as no scarification follows the dehydration method.

In the more advanced accessible malignancies, such as epithelioma of the mouth, tongue or body, coagulation offers the best results where complete destruction or amputation is desired. The procedure is the same as in any other major operation. Etherization of the patient is preceded by an injection of one-fourth grain morphin and 1/100 gr. hyoscine, an hour and a half and again three-quarters of an hour prior to operation. Ether or chloroform inhalation is given up to the time of the actual operation and then stopped. Chloroform has been employed throughout the operation without any untoward effect. Important blood vessels should be tied off before coagulation takes place within their vicinity so as to prevent secondary hemorrhage, a condition which may occur between the tenth to the twenty-second day following the operation.

What are the advantages with this modality? If the knife can accomplish the same results and expeditiously, why, the surgeon will ask, shall we trouble ourselves with a new and fairly expensive technic? We answer these questions as follows:

1. Immediate destruction of the neoplastic cells in situ.

2. The carrying of the heat, by the current, to a depth in the tissue beyond that actually treated, thus assuring the destruction of any malignant cells which have been lying beyond the area which actually appears to have been involved—a selective action as it were.

3. The practical elimination of either promary or secondary hemorrhage, as the blood vessels are thrombosed beyond the area of destruction.

4. For the same reason there is less risk of spread of metastatic elements through either the blood or lymph channels.

5. The minimum formation of contractile connective tissue.

6. Alleviation of pain; practically no surgical shock; accuracy of dosage, because the current is under absolute control of the operator; and the sterilization of the wound incidental to treatment.

Views Regarding the Value of Surgical Diathermy

The indications for endothermic surgery or electrocoagulation are numerically on the increase. This is evidenced by the recent literature of this specialty. Malignant neoplasms of the bladder are treated more effectively by electrocoagulation through a superpubic cystostomy or transurethral method than by the knife. B. C. Corbus in discussing the paper of Bumpus, published in the *Journal A. M. A.*, October 11, 1924, said in part: "I am absolutely opposed to excision of any tumor, whether potentially benign or malignant for diagnosis or treatment. Diathermy is the greatest force that has been added to medicine or surgery in recent years. The more

malignant a growth is, the less should we attempt to remove it by excision."

Kolischer, discussing the same paper, makes the following sweeping statement: "For myself I cannot see why any surgeon, unless extremely projudiced, could employ another method in dealing with malignant vesical tumors, after he once has witnessed electrocoagulation. Surgical diathermy shows a very low primary mortality; the whole procedure is simple and practically bloodless; even if definite cure cannot be obtained, electrocoagulation relieves the suffering and stops the hemorrhage."

In conclusion, I may be permitted to say that diathermy is not a panacea for all human ills, but a scientific remedy which is highly effective in the affections mentioned, and possibly in many others, which lack of time and space forbid mentioning.

Familiarity with the technique is essential. Given an exact diagnosis and proper establishment of therapeutic indications, diathermy will prove a reliable and effective addition to our armamentarium.

30 North Michigan Avenue.

CLINICAL DATA IN CASES OF RENAL LITHIASIS*

WILLIAM F. BRAASCH, M.D.
Section on Urology, Mayo Clinic
ROCHESTER, MINNESOTA

The problems relative to the treatment of renal lithiasis which have most engaged our attention in recent years are those with regard to the etiology of the disease, the interpretation of the roentgenogram, the surgical indications when the stones are multiple, and postoperative recurrence.

Etiology.—The bacterial cause of renal lithiasis has been quite clearly established in recent contributions on the subject. Rosenow and Meisser succeeded in making stones form in the kidneys of dogs following inoculation with streptococci from the urine of stone-producing patients. Keyser continued the investigation from a chemical standpoint, and was convinced that bacterial exudates caused an atypical precipitation of the urinary crystals from the normal urinary colloids. Realizing that in alkaline phosphatic or incrusted cystitis, the formation of stones could be studied at close range, we carried out a careful investigation of the etiologic factors involved in such cases. As a result, Hager and Magath concluded that the stones are evidently caused by a Gram-negative organism which is capable of breaking up urine into carbon dioxid and ammonia, and thereby favoring the precipitation of the urinary salts in the form of incrustations.

Interpretation of the roentgenogram.—The day of the surgeon who operates on the strength of the patient's symptoms, or on the findings in a roentgenogram alone, is past. Although the interpretation of roentgenograms has greatly improved in the last few years, the necessity of identifying shadows by means of cystoscopy and urography still remains, and by these measures the percentage of error in diagnosis has been greatly reduced. Accuracy in the interpretation of doubtful shadows of the urinary tract depends largely on the degree or skill in the interpretation of the urogram. The following conditions are most often the cause of confusion: 1. calcified glands; 2. gallstones; 3. renal tuberculosis; 4. unusual position of stone shadows, median, low and high, and 5. absence of shadows due to soft or early formation.

It is true that the outline of the gallstone shadow is quite characteristic and usually easily recognized. Nevertheless, there is a definite group of gallstone shadows which simulate those cast by the renal stones, just as there are shadows of renal stones which are very similar to those of gallstones. Recent developments in the technic of roentgenography of the gall bladder have been of great aid in the identification of gallstone shadows. The Graham method of visualizing gallbladders in particular often obviates the necessity of employing pyelography. It is evident, however, that in certain cases cystoscopy will be essential to their complete identification.

Calcified areas of tuberculosis, while usually distinguished from stone by peculiarities in the roentgen-ray shadow, will occasionally be a source of confusion, and require cystoscopic findings and urography for their identification. Renal atrophy resulting from multiple renal stones may be exceedingly difficult to distinguish from the shadows occurring with occluded types of renal tuberculosis.

Unusual position of a shadow of renal stone may be the source of confusion. An apparently extrarenal location of a shadow may be due to

*Read before the Inter-State Post-Graduate Assembly of America, October 20, 1924.

abnormal displacement of the kidney containing the stone. This is common with renal ptosis. An anomalous position of a shadow of a renal stone is, however, more commonly indicative of renal anomaly. Thus, an abnormally high shadow may indicate a stone in the upper of duplicated pelves; an abnormally low shadow, a stone in the lower of duplicated pelves, and a shadow near the median line, a stone in the pelvis of a horseshoe kidney.

Stones which are so soft that they do not cast a shadow may be easily overlooked; they can be recognized only with the aid of pyelography. Such stones are composed of soft phosphatic concretions; a mass of urates; semi-organized blood clots with calcareous deposits; putty-like deposits, or cystin. The presence of a stone may be inferred from the pyelogram by an apparent filling defect in the pelvis corresponding to the outline of the stone, and by accentuation of the periphery of the pelvic outline.

Surgical indication.—In the treatment of renal lithiasis, the indications and the method of operating for the removal of a single stone, which is too large to pass spontaneously, have been fairly well standardized. In the presence of multiple stones, however, the indications for operation are not standardized, and the procedure is largely a matter of clinical judgment. It must then be decided whether the stones should be removed, or a kidney. It may be comparatively easy to remove the kidney for stone, but it requires experience and the coöperation of several technical aids to save the kidney and successfully remove all the stones. The tendency in recent years has been toward conservative treatment. If, after the destruction of the kidney necessary for complete removal of stones, sufficient normal tissue remains, it should be saved.

A number of factors must be considered in determining the advisability of conservative operation. It must be recognized that the removal of certain types of stones may necessitate considerable destruction of renal tissue. The amount is not so much dependent on the size as on the shape and position of the stones. Branched or coraliform stones filling the pelvis and calices are usually removed with great difficulty, and with resulting destruction of a large portion of the kidney. Round stones, even if of considerable size, are much more easily removed. Small stones, even if in different portions of the kidney, can usually be removed with the aid of renal fluoroscopy without great loss of renal function. I recently observed a case of this type in which five stones were removed from the kidney, and a month after operation the dye return was practically normal and the function equal to that before operation.

The comparative function of either kidney may be a factor in determining the type of operation, especially in cases of bilateral nephrolithiasis. Intravenous injection of indigocarmin offers the simplest method of determining this. The intensity of the color of the urine from each ureteral orifice gives a rough but fair index of the comparative renal function. The differential phenolsulphonephthalein test, while more accurate, is subject to technical error. When the function is normal, a conservative operation is indicated if there are no other complications; if there is no return of dye, nephrectomy is generally necessary. Intermediate values are inaccurate, because of reflex irritation caused by the presence of stone.

If there is no pain or other evidence of urinary disease, indications for operation may be urgent. It should be emphasized, however, that the "silent" stone can insiduously cause considerable renal damage. The patient's age may also be a factor, particularly in unilateral conditions. Nephrectomy might be advisable in an older person, whereas with similar conditions in a young person, a conservative operation might prove satisfactory. With stones in both kidneys, every effort should be made to save the kidney when possible, and only conservative operations should be attempted; if the stones are large and branched, it would be inadvisable to operate at all, unless the symptoms were so severe that relief were imperative.

Recurrence of stone.—Cabot deserves credit for directing attention to the possibility of the recurrence of renal stone following operation. Early estimates of recurrence were as high as 50 per cent., but they were based largely on stones overlooked at operation. A recent survey of more than 1,400 patients operated on at the Mayo Clinic for renal stone reveals the fact that the actual recurrences were less than 10 per cent.

A shadow may be identified as intrarenal, but there is no diagnostic method which will always enable one to determine the exact number of stones present. It is not generally recognized

that 1. although there may be but one shadow in the roentgenogram, it may be due to several overlapping or adjacent stones, and 2. although there may be multiple shadows in the roentgenogram, there may be but one or few stones in the kidney, the number of shadows in the roentgenogram frequently differing from the number of stones discovered at operation. Thus, in a review of our records of 1,026 patients operated on for renal stone, the following interesting data may be deduced:

Illustrations of inexact interpretations are: 1. in 146 cases, a single shadow was reported in the roentgenogram and multiple stones found at operation; 2. in sixty-six cases, multiple shadows were seen in the roentgenogram, and a single stone found at operation; 3. in twenty-one cases, the absence of shadows was reported in the roentgenogram, and one or more stones were found at operation, and 4. in five cases, shadows were seen in the roentgenogram of the upper ureter, but at operation stones were found in the kidney, not in the ureter.

In order to obviate the possibility of leaving stones in the kidney at operation, renal fluoroscopy at the operating table has been practised in the Mayo Clinic for the last five years. The method has been used in more than 200 cases, and has been of great assistance in the successful removal of multiple renal stones. In fact, the question might well be asked whether a conservative operation for multiple stones should be attempted without it. It has been claimed by those who have not had adequate experience with the method that it often does not reveal all the stones. This may occasionally be true of minute fragments, 1 or 2 mm. in diameter, but such stones will pass spontaneously in most cases. One of the objections to renal fluoroscopy might be that it places the surgeon in an awkward position when a small stone, not revealed by the fluoroscope, is later discovered in the end of a calix or in the parenchyma. Considerable mutilation of the kidney may be necessary before the small stone is finally found and removed. Another objection may be that the exact localization of a small stone by the fluoroscope may be extremely difficult. It is true that it is frequently hard to estimate the relative depth of the site of the stone, but needles may be inserted at right angles, under the guidance of the fluoroscope, so that their points will approximate at the site of the stone. No method of diagnosis is infallible, but in a review of several hundred cases of renal lithiasis in which renal fluoroscopy was employed, even minute shadows were found in less than 3 per cent. of postoperative roentgenograms, and in several cases these shadows were doubtful.

The problem of recurrence of renal stone is of unusual interest, and presents several angles. From the history of most patients with renal stone, it is quite apparent that there is usually a definite period during which all stones are formed. It has been found that this period varies from one to ten years, but in most instances it lasts from two to three years. Several stones may form, possibly first in one kidney and then in the other. By the time the patient comes for operation, he has usually had symptoms of stone for several years, so that after all stones have been completely removed, the percentage of probable recurrence is comparatively small. That there is a limited period of stone formation is furthermore borne out by the fact that a second recurrence, after the second operation is rare. However, a certain small group of patients have stone-forming kidneys and pass stone after stone in spite of anything that can be done, but in most such cases the stones are small and do not require surgical removal.

It was formerly thought that the size, position and number of stones were factors in the recurrence. A survey of the cases at the Clinic, however, refutes the theory that the size of stones particularly increases the probability of recurrence. In fact, single stones of moderate size in the pelvis of the kidney, and requiring a simple nephrolithotomy, have recurred in a relatively greater percentage than any of the others. Branched stones with multiple fragments, and sand should, theoretically, be subject to recurrence. However, if all fragments are removed, which may be exceedingly difficult, their tendency to recur is not above the average. If multiple stones are completely removed, there is a lessened tendency to recurrence, as the stone-forming cycle may have been completed. Since the recent experiments of Rosenow, Keyser and Hager and Magath all indicate the bacterial etiology of stone, it is apparent that in order to reduce the possibility of recurrence, all foci of infection should be removed. A recent review of post-operative records of patients when renal

fluoroscopy was used, and in whom all foci were removed shows a recurrence in but 3 per cent.

In conclusion, it should be said that the diagnosis and treatment of renal stone belong to no single division of medicine and require the close coöperation of the internist, urologist, and roentgenologist. The coöperation is necessary even at the operating table in order to insure the complete removal of all stones with a minimum of renal destruction. Finally, in order to exclude the etiologic factors of stone formation, all possible foci of infection should be eliminated.

PRIMARY SARCOMA OF THE TONSIL*

EDWIN McGINNIS, A. B., M. D., F. A. C. S.
CHICAGO

Though most authors of articles on the subject begin by saying that sarcoma of the tonsil is very rare, the literature is quite abundant, and most text-books devote a fair amount of space to its discussion.

An examination of sixty-one case reports brings out some interesting observations. In fifty-five cases the tumor was limited to one tonsil, while in six both tonsils were involved. A preliminary tracheotomy was done in one case, and in another case Dr. J. C. DaCosta was prepared to open the trachea if necessary.

Dr. John E. Rhodes did a ligation of the external carotid to control the bleeding. W. R. Dabney resected the left external carotid, and nine days later the right in a case of adenosarcoma of the tonsillar ring with glandular involvement. Following this the tissues of the throat became blanched, and the tumors became smaller.

The treatment in this condition depends on the size of the growth and amount of involvement of the surrounding tissue. Dr. J. C. Beck advises the use of radium, x-ray in conjunction with surgery, also Coley's toxins. Dr. Henry K. Pancoast treated cases with implantation of radium into the tumor mass.

The use of fulguration or diathermy would be helpful in this type of disease.

Dr. Guthrie reports three cases as worthy of record, because "few laryngologists see more than two or three cases in the course of a life time." This may be my excuse for reporting one.

Mrs. W. S. W., aged 63 years, was first seen in my office Aug. 17, 1923, with the following significant history:

Sometime in May she noticed a full sensation in the throat with gradually increased difficulty in swallowing. With mirror she saw that left side of throat was swollen. Aug. 5 she consulted a physician who removed a piece of left tonsil for microscopic examination. It proved to be a small round cell sarcoma. Her general health was excellent; and there was no history of malignancy in family. Examination of the throat revealed a large smooth tumor extending into the left supratonsillar fossa crowding the vulva to the right. The tumor had grown from the posterior portion of the tonsil. The lower border was at about the level of the upper portion of the larynx. The anterior pillar was free. Externally the cervical glands were not enlarged.

Having assisted in the treatment of two similar cases in which injection of lactic acid, radium, and x-ray were used with poor end results, I determined to try a free dissection in this case.

Patient entered Presbyterian Hospital Aug. 20, 1923, as case No. 169835. The usual preparation for a local tonsillectomy was instituted. A preliminary medication by hypo of atropine gr. 1/150, morphin gr. ¼, one-half hour before operation. Surface application of cocain 10% to mucous membrane and injection of apothesine ½% around the growth. The dissection by sharp knife proceeded from the front, backwards. As the mass seemed to have invaded the uvula, this was sacrificed. No great difficulty was encountered and only two arteries requiring ligatures were cut. The cavity was then seared lightly with the actual cautery.

The pathological report: diagnosis—lymphosarcoma. The section showed tonsillar tissue surrounded by large masses of tissue consisting of round cells in a loose meshwork of fibrous tissue. These cells closely resembled the lymphoid tissues of the tonsil except that they were more loosely arranged and did not stain as deeply. This tissue had invaded the surrounding submucous tissue of the adjacent pharyngeal wall. The specimen had a fibrous capsular base.

Patient had a rather smooth convalescence except that after three days liquids came out through the nose on swallowing. Feeding was carried on with nasal insertion of catheter. During the next week she had three x-ray treatments to the external neck.

X-ray of chest: No evidence of metastatic foci was visible (Dr. C. B. Rose).

An examination of the throat was made Nov. 7, 1923: The left side of the soft palate was tightly contracted, but there was no evidence of tumor tissue present.

If seen early enough surgery offers the best chance for a complete cure. A careful dissection with control of the bleeding is accomplished readily with local anesthesia. Delayed cases are

*Read at meeting of Illinois State Medical Society, at Springfield, May 7, 1924.

not favorable because an external operation on the neck adds to the risk.

104 So. Michigan Ave.

REFERENCES

Dr. Guthrie: (J. Laryngol. Rhinolo., V Otol., 33:310, Oct., 1918.

Dr. J. C. DaCosta: (Annals of Surgery, 26:107, 1897).

Dr. John E. Rhodes: (Trans. Am. Laryngol. Assoc., 1908, p. 88.)

Dr. W. R. Dabney: (Laryngoscope, 16:378, 1906.)

Dr. J. C. Beck: (Applied Path in Diseases of Nose, Throat and Ear. C. V. Mosby Co., St. Louis, 1923.)

Dr. Henry K. Pancoast: (J. A. M. A., 69:980, Sept. 22, 1917.)

DISCUSSION

DR. ROBERT SONNENSCHEIN, Chicago: It is well known that the x-ray and radium have a selective action on lymphoid tissue and especially in those forms of small round-cell sarcoma is there field for the best results. Before the section of the A. M. A., 1920, in New Orleans, in my paper on the use of radium in diseases of the nose and throat there was reported a case of sarcoma of the tonsil in a man about 60, in whom radium caused a complete disappearance of the growth. The man died three years later of pneumonia. But in the meantime he had no recurrence.

DR. THOMAS J. WILLIAMS, Chicago: About four years ago I had a case of sarcoma of the right tonsil, involving the lower pole of the tonsil and anterior pillar. The case refused operative procedure and went to one of the radium men in Chicago where he was treated for about two or three months when I saw him again. I think probably it was toward the fourth month when he returned. The sarcoma had been replaced by smooth connective tissue and it seemed to be entirely healed except down at the side of the tongue where there seemed to be some induration and a fissure. I suggested that he go back for more treatments which he did. The thing seemed to have disappeared for about a year and a half or two years when he developed a metastatic growth elsewhere,—I forget the exact location and the patient succumbed to this metastatic development.

DR. FRANK J. NOVAK, Chicago: It seems to me that with recurrent malignancy of the throat too much attention or too much thought is centered upon the removal of the lesion. It is a conception which, perhaps, is wrong. The problem, I believe, is one of biochemistry and the overemphasis of surgery or the x-ray is emphasis in the wrong direction. If the lesion has to be removed, I believe that the use of the high frequency current—and Dr. Beck has removed recently such tumor with the high frequency current very successfully—is a method far superior to the use of a sharp cutting edge. The problem, I believe, is being attacked from the wrong side, the removal of the local manifestation of a general condition. The studies in Rochester recently by the physiological chemistry department of the changes in the blood count show that radical changes occur in the blood in malignant conditions, and a further study of that will probably point out a radical method of treatment of malignancy.

THE SOUND PROOFED ROOM IN THE INSTITUTIONAL TREATMENT OF THE PSYCHOSES

SANGER BROWN, M. D.,
KENILWORTH, ILL.

The sound proofed room as herein referred to may be briefly described as an apartment so insulated as, within reasonable limits, to confine within its walls any noise which may be made by its occupants. Its purpose is to relieve the physician, acting on the principle of the greatest good to the greatest number, of the necessity of administering sedatives and hypnotics to patients to their obvious detriment.

It may be safely asserted that the importance of the sound proofed room as a resource in the institutional treatment of the psychoses has not yet received either by the medical profession or the laity, anything like the recognition that its value merits.

Probably one of the principal reasons for this lack of interest lies in the fact that the matter has not been enough talked about to make a sufficiently deep and lasting impression upon those properly concerned; for whenever the advantages of the sound proofed room are explained the hearer invariably expresses cordial approval of them. However, I can recall no instance in which a physician in choosing an institution for an excited patient gave the question of sound proofed rooms the slightest consideration. After twenty years of experience with them I am firmly convinced that the sound proofed room involves a principle of cardinal importance in the institutional treatment of the psychoses, and I have the courage to hope that my expressed conviction will sooner or later receive very wide endorsement.

The sound proofing of rooms has long been in vogue for commercial purposes, as for instance, where a musical studio is adjacent to a business office; hence the methods of effecting insulation need not be here specified. Obviously the process of sound proofing need not affect the general appearance of the apartment in any respect. When properly equipped with forced ventilation the room should be large enough to accommodate a patient and nurse without the necessity of opening doors or windows to purify the air within it. Since the room must be available in hot as well as cold weather forced ventilation is indispen-

sable, though gravity may suffice under favorable outdoor temperature conditions.

As evidence that the subject has not enjoyed due publicity the question has been asked in all seriousness, if the sound proofed room were not in fact only the padded cell masquerading under a different name, whereas in the institutional treatment of the psychoses the purposes of the two devices are as widely divergent as may be. The padded cell or room need not be discussed here since its position in clinical psychiatry has for a long time been all but universally condemned by clinicians.

It happens all but invariably that cases of psychoses seeking treatment in private institutions have only done so after various forms of sedation and hypnosis have been carried to the limit. In removing the patient to an institution both his family and his physician may fail to appreciate that the necessity of securing relief from any noise or disturbance he may make is likely to be even greater than ever for here there may be patients in a critical condition whose chances of recovery would be sensibly impaired if subjected to agitating influences. The medical staff in these circumstances, unless sound proofed rooms be available, acting on the principle of the greatest good to the greatest number may feel impelled to push sedation and hypnosis still farther greatly to the detriment of the newly admitted patient.

It has long been the practice, as a matter of course, to group noisy and turbulent patients in certain insulated parts of the institution or even to provide a detached building for them. The advantages of this classification need not here be discussed. But conditions which only too often must obtain in the group of patients so set apart, unless sound proofed rooms are available, are far from being those which any one would choose as being best calculated to promote either the comfort or recovery of a given case. Though high excitement in the acute psychoses implies an element of danger from exhaustion it is from this class that the largest proportion of recoveries is drawn. Such cases not infrequently run a course of many weeks and the metabolic processes are well night certain to become profoundly deranged if medicinal sedation be maintained over so long a period. Indeed, it is easy to understand how such medication might determine a fatal issue, or worse a permanent dementia, in a case otherwise curable.

The judicious use of medicinal sedatives and hypnotics as is well known, afford relief and benefit in many instances; they no doube very properly find a wide field of usefulness in family practice. When, however, an acute psychosis develops, notwithstanding their free administration, and it becomes expedient to place the patient in a psychopathic establishment these drugs should be withdrawn, and when this is accomplished as it may be when a sound proofed room is available, the case, if curable, all but invariably advances to recovery without further resort to medicinal sedation or hypnosis. After some years of experience in institutions where medicinal sedation and hypnosis were freely and regularly used, it is my conviction, if they are withdrawn and withheld as above indicated, the patient will pass through his attack more quickly, more comfortably, and with a better prospect of recovery than he would do or have if the specified medication were persisted in.

It must be admitted however, that even in institutional practice conditions are sometimes met with, as for instance in certain cases of inveterate insomnia, where the relief afforded the patient by the occasional exhibition of a full dose of an appropriate hypnotic should not be denied him.

The writer's observations have been made in an establishment having thirty-four rooms, eight of these being sound proofed, but an experience of twenty years would seem to have demonstrated that six would have been ample. Of twelve hundred consecutive cases about one in five or twenty per cent. required the relief which only the sound proofed room could supply. In a given institution the requisite proportion of sound proofed rooms must vary within wide limits depending upon the course from which its patients are drawn.

In conclusion it is claimed that a considerable proportion of patients suffering from acute insanity can be fairly and humanely treated only in institutions where sound proofed rooms are available, and that when this obvious fact is duly appreciated, their adequate installation in both public and private institutions devoted to the treatment of the insane will be insistently demanded.

SEMILUNAR CARTILAGE DISEASE

A PLEA FOR THE EARLY RECOGNITION BY MEANS OF THE ARTHROSCOPE AND THE EARLY TREATMENT OF THIS CONDITION*

PHILIP H. KREUSCHER, M. D.
CHICAGO

The semilunar cartilages are two crescentic lamellae which serve to deepen the surface of the head of the tibia. The outer border of each cartilage is thick and convex and attached to the inner side of the fibrous capsule of the knee-joint. The inner border is free, thin and concave. These cartilages lie upon the flat surface of the upper end of the tibia at the circumference

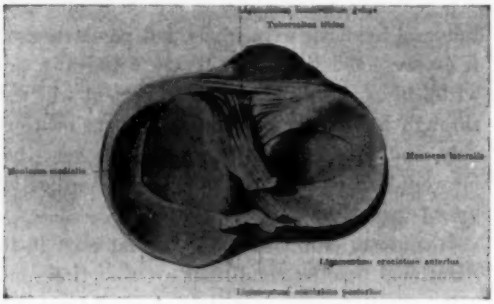

Fig. I
Semilunar cartilages and their attachments.
(Spaltenholtz)

and are in no way firmly attached to the tibia nor a part of it when in their normal condition. The internal cartilage is semilunar in shape considerably longer anteroposteriorly than laterally. The external cartilage is almost circular, more firmly attached in the anterior portion of the knee-joint and is considerably smaller than the internal. (Fig. 1.) Because of its anatomic formation and attachments it is less frequently loosened, injured or deranged than the internal. Various authors give the ratio of involvment as 20 to 1. In my experience I have seen only one diseased external cartilage.

Of all pathological conditions involving the knee-joint there is perhaps none as important and as interesting as the study of the cartilage derangements. Because of the absence of a typical history which, according to our textbooks, constitutes three very simple findings, namely, locking of the joint, incapacity and a subsequent distention of the joint with fluid, we often overlook semilunar cartilage disease. We forget that there is not always a fracture of the cartilage with locking of the joint, that there is not always a nipping and slight clicking in the joint, that the cartilage may be loosened, giving unusual mobility and consequent irritation of the surfaces, which may simulate in its symptoms ordinary synovitis of the knee-joint. In such a condition a patient has an occasional twinge throughout the joint when the leg is twisted or turned into a certain position. There may be a very slight sensitiveness over the anterior or internal aspect of the knee without any of the classic symptoms mentioned above. Trauma is the one great etiologic factor which deranges the cartilage. It is, therefore, most frequently seen among the laboring class, especially the coal miners, and also among athletes, especially those who take part in football and baseball games. The mechanism of injury is rather simple when one considers that the condyle of the femur under certain conditions presses forcibly forward and laterally upon the normal cartilage. When this force is exerted beyond a certain normal limitation, then injury results. The classification of these injuries may be as follows:

1. A simple tearing or detachment of the fibrous connective tissue at its outer circumference; 2. a loosening of the anterior tip or one-third of the cartilage; 3. a simple fracture of the cartilage, usually at an anterolateral position; 4. multiple transverse or linear fractures; 5. fragmentation of the cartilage by a nipping which takes place between the tibia and femur; 6. a partial or complete destruction by other diseases of the knee joint. (Fig. 2.)

A very unusual injury was shown in one of my recent cases, a football player who was tackled violently from in front, thus producing a hyperextension and a sudden adduction of the knee. The incapacity was immediate and the pain, which was posterolateral, continued for a number of weeks. At the operation a definite fracture was seen in posterior portion of the semilunar cartilage. It is claimed by some writers that marked injury to the semilunar cartilage cannot occur unless there is a definite division or tearing of the fibrous capsule or some of the internal lateral ligaments. This, I believe, is not in consonance with our clinical findings.

The diagnosis of fracture is not difficult when

*Read before the Section on Surgery, of the Illinois State Medical Society, Springfield, May 7, 1924.

one has the history of injury and the classic locking of the joint. In those cases, however, where there is a localized pain and sensitiveness on the inner side of the knee-joint with only an occasional click in the joint and a more or less

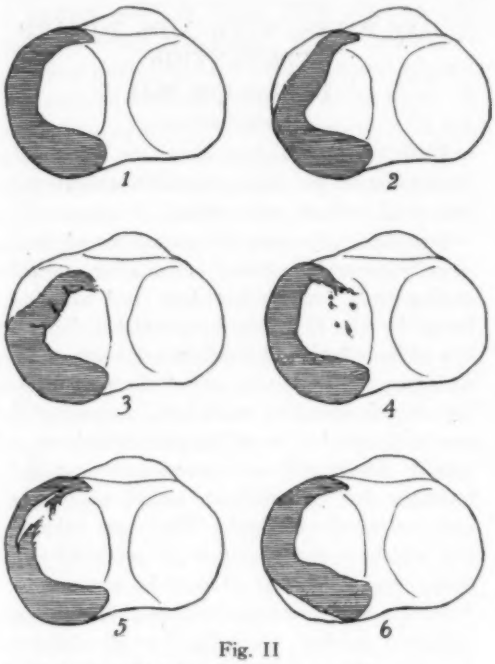

Fig. II

1. Normal right internal semilunar cartilage.
2. Rupture at the anterolateral attachment of the cartilage.
3. The loosened cartilage along the lateral and internal aspect with multiple fractures.
4. Complete detachment of the tip of the cartilage with fragmentation.
5. A linear fracture with fragmentation.
6. Partial detachment at the posterolateral position.

(Figs. 2, 3, 4, 5, 6 represent five of the writer's cases reprinted from the article on "Knee-Joint Injuries" in the Annals of Surgery, July, 1924.)

classic hydro-arthrosis, the surgeon is called upon to differentiate from a localized subacute or chronic synovitis, a foreign body in the knee-joint, a localized tuberculous process or a hypertrophic synovitis with villous formation. The x-ray has been of very little aid as it rarely ever shows a shadow or outline of the cartilage. Kleinberg[1] in a recent article suggested the injection of oxygen into the joints before subjecting them to roentgen ray examination. He believes that in this way we are able often to recognize fractured and misplaced cartilages. The time has come when we will make very careful examinations of the interior of the joint by means of the arthroscope very much as the genito-urinary specialist examines the inner wall of the bladder and the rhinologist explores and inspects the antrum and nasal cavities. (Fig. 3.) Arthroscopy furnishes a definite means of diagnosing the various lesions of the knee-joint and especially those in which there are foreign bodies and injuries to or fractures of the semilunar cartilages. We are able to see definite localized areas of edema and inflammation in the synovial membrane or on the joint surface. The method consists in filling the knee-joint com-

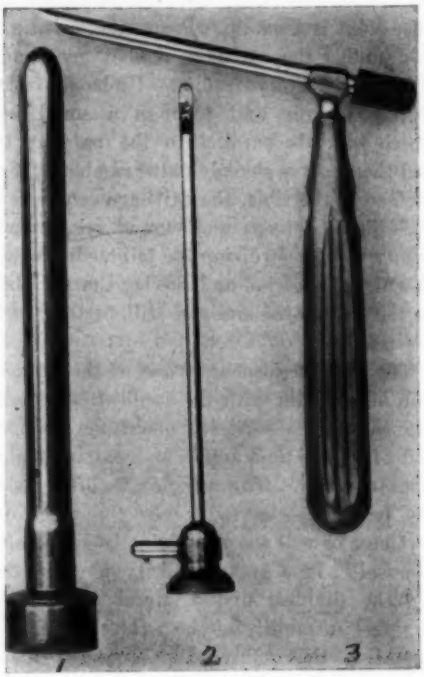

Fig. III

The author's arthroscope.

1. Carrier for scope when not in use.
2. Electric carrier (Holmes) with lens system and electric light.
3. Pointed canula into which carrier is placed as it is introduced into joint cavity, which has been distended with oxygen or nitrogen gas.

pletely with nitrogen or oxygen gas or if desired with a clear weak formalin solution, so that the synovial capsule is distended completely. In this way we are able to inspect the semilunar cartilages at their various attachments and throughout their entire extent and can by mechanical

1. Kleinberg, Samuel. Archives of Surgery, 8, No. 3, 1924, p. 827.

application of the arthroscope against the cartilage determine any unusual mobility. This method enables us to diagnose our more or less obscure cases earlier and therefore shorten the period of disability and lead us to prompt treatment long before the knee-joint has been wrecked beyond repair.

There is only one treatment for a semilunar cartilage derangement and that is complete extirpation of the cartilage. A removal of the anterior half or two-thirds of the cartilage leaving the posterior one-third in position must be considered bad surgery. This cartilage when once fractured or severed from its attachment does not usually reattach itself in a normal position no matter how long the immobilization of the knee-joint is kept up. Frauenthal's iodin injection under the cartilage has in my hands not given satisfactory results. Under the strictest aseptic technic and through a small incision which extends parallel to the patellar tendon and then curves sharply outward along the upper surface of the tibia, the cartilage can be removed with tissue forceps and curved scissors without in any way jeopardizing the joint. With the knee in a flexed position and the leg sharply abducted at the knee-joint one can still further facilitate the removal.

The after treatment is one of the immobilization of the joint with the application of a Buck's extension for a period of about one week, at the end of which time active and passive manipulation is begun. The question is often asked by the patient,—what will take the place of this cartilage or will the knee-joint be stable after its removal? In a great majority of cases, there is not the slightest undue lateral motion nor the slightest instability of the joint. The earlier the operation the quicker the recovery; the more timely the surgical interference the less destruction of vital tissues. Many of our operated cases assume their usual occupation in three and one-half weeks.

We conclude:

1. That semilunar cartilage disease is very much more common than is usually supposed.

2. The diagnosis can be made early from the history and by the use of the arthroscope.

3. Complete removal of a diseased cartilage is the only rational treatment.

4. A diseased cartilage, especially one that is fractured and locks and irritates the joint, is a positive menace and frequently destroys the osseous cartilage and the synovia. Therefore, as a general rule an early diagnosis and early treatment of this condition is urged if we wish to save the joint and avoid a long-continued incapacity.

GAS PAINS; WITH AIDS TOWARD PREVENTION

H. Hoyt Cox, M.D.
CHICAGO

Much has been written about the treatment of post-operative gas pains, but little attention has been paid to their prevention.

Gas pains are cramp like sensations of varying severity occurring several hours after operation, lasting from four to five days, and usually relieved by the first bowel movement. They are due to the dilation of localized segments of bowel with gas, and constitute one of the most distressing of post-operative conditions. Important factors in the production of gas pains which are universally recognized, are excessive trauma of the intestine due to handling, packs, sponges, etc. and prolonged anesthesia. There are other factors which do not appear to be generally appreciated, but which are of equal importance.

It is a time honored custom and with many surgeons routine, to order for all abdominal operative cases, catharsis the day before the operation and a large enema the preceding night or following morning. At the present time there is a growing tendency to omit the former, but most surgeons still employ the enema. Let us consider for a moment just what the effect is. The patient is weakened by the frequent bowel movements due to the physic and his entire lower bowel and rectum are then evacuated by the enema. In other words we have an empty, collapsed intestinal tract which, in addition to the paresis of the bowel, caused by the trauma and the anesthetic, make an ideal condition for the development and accumulation of gas. In addition to these factors no food is given until the third day if soup and tea be excepted, and yet it is customary to try vigorously to move the bowels forty-eight hours after the operation. What is the result? The patient has at this time a bowel practically empty and distended with gas. The physic and enema whip up an already weakened intestine which reacts only partially and the patient continues to suffer.

It is generally recognized that the emergency abdominal cases which have had no catharsis or enemata run a much smoother post-operative course than those extensively prepared before operation. It was by repeated observation of this fact that we were led to adopt this deviation from the routine and the results have been, in the main, extremely gratifying. Some roentgenologists and internists have recognized and applied the principles outlined above for many years. If a clear film is desired, catharsis and enemata are forbidden, for the x-ray man recognizes that where there is an empty bowel there is gas. In the treatment of chronic constipation the fundamental principle is to keep the bowel filled with a residue so that the muscular walls will contract down on it and force it out. The mechanical presence of the residue supplies the necessary stimulus for the intestine to contract down and produce normal peristalsis. In other words the residue increases the tonus of the intestinal wall and prevents the formation of gas. Early feeding following operation is advisable because it supplies more residue. After allowing the intestines to rest for seventy-two hours, to recover from the paralyzing effect of the anesthetic, we give our cathartic and enema. In the great majority of cases, due to the abundance of residue present, the bowels move freely, and post-operative discomfort from this time on is reduced to a minimum.

The pre-operative and post-operative treatment that we have adopted for the past three years has been as follows:—The patient is admitted the evening before operation. If he is nervous or apprehensive a mild sedative is administered. *No Cathartic or Enema is Given.* He is permitted to eat a reasonable evening meal but breakfast is omitted on the following morning. One hour before operation he is given 1/6 grain of morphin and 1/200 grain of atropine sulphate as this later decreases salivation and also the total quantity of anesthetic required. Following the operation the patient is kept warm with hot water bottles, blankets, etc. Tap water or normal saline per rectum is *Omitted* except in those cases which have shown a marked operative shock. Shortly after the patient has recovered from the major effects of the anesthetic he is given hot water by mouth. Morphin is used sparingly. Usually one or two doses will suffice. Not infrequently the patient will vomit the water given but in this way he washes his stomach. The following day if the nausea has subsided the patient may have a light diet consisting of soup, tea, cereal and custard. The diet is gradually increased until the fourth day when he is on general diet. Seventy-two hours after operation he is given three ounces of milk of magnesia and at four-thirty in the afternoon, if necessary a large soap suds enema.

In the great majority of cases so handled the incidence and severity of gas pains will be slight and following the enema a copious evacuation will be obtained.

In conclusion we believe that pre-operative catharsis and enemata in the average laparotomy are not only unnecessary but harmful, because they tend to produce gas pains. Early feeding is to be encouraged for it produces a residue for the bowel to contract down on and thus tends to prevent gas pains. The bowels should be allowed to rest for seventy-two hours before catharsis or enemata are given so as to give the bowel time to recover from the paralytic effect of the anesthetic and trauma. Tap water or saline per rectum should be omitted in all cases except where the operative shock has been great. Morphin should be used sparingly. We believe that if these suggestions are carried out in the ordinary laparotomy cases, the patient will have a much smoother convalescence, and his stay in the hospital will be materially shortened.

6701 Stony Island Avenue.

OTOSCLEROSIS, ETIOLOGY AND TREATMENT

EDGAR E. POOS, M. D.,

Attending Oculist and Aurist, Mullanphy Hospital, St. Louis, St. Vincent and St. Elizabeth Hospitals, Belleville.

BELLEVILLE, ILLINOIS.

Otosclerosis is a chronic non-suppurative disease of the bony capsule surrounding the labyrinth generally independent of the health or intercurrent disease of the labyrinth.

Etiology. Many theories have been advanced by various otologists of this and foreign countries, but it still remains a great problem to be solved by the otologists. Some of the theories are:

Haberman is among those who have held that syphilis is a direct cause of the disease.

Korner could find no proof of it being of syphilitic origin.

Denker concluded that there is no proof that syphilis is a direct cause, but may be a factor in the progress of the lesion rather than the causation.

Kerrison believes it to be due to the influence of poisons conveyed by the blood stream, from extraneous focuses of infection as tonsils, teeth, etc.

J. A. Stucky of Lexington, Kentucky, believes an important factor in the progress if not in the causation of otosclerosis to be the circulation in the blood of toxins resulting from errors in diet.

Denker has found it to be more common in women 60 per cent. to men forty per cent. Heredity seems to play an important part in the etiology as proved by Hammerschlag, Korner, Gray and others. Gray regards it as a degenerative process dependent upon inherent defects in bone cells or bone structure of the organ of hearing without evidences of inflammatory processes past or present being found. Also thinks that it is due to a failure of the local blood supply and in this way brings it into some etiological relation with depressed systemic conditions, and particularly those in which anemia is a prominent feature.

Seiberman regards it as the last stage in the process of the development of the labyrinth capsule, a stage which ordinarily doesn't take place. He believes that the process originates not in the bony capsule but in the layer of cartilage cells lying between the original membranous capsule of fetal life and the surrounding bony capsule later developed from the connective tissue of the skull.

Pathology. Otosclerosis is a lesion which generally originates in the bony capsule surrounding the labyrinth; if occurring in region of the oval window it may give rise to ossification of the annular ligament or rather to its absorption and replacement by bone, with resulting fixation of stapes, or it may involve intra-labyrinthine structures, that is, spiral membrane, and cause deafness without stapedial fixation.

The new spongy bone is characterized by Haversian Canals of abnormal width and by large medullary spaces containing numerous multinuclear cells and large thin walled blood vessels. The bone may retain its spongy character, or may in time be converted into dense bone.

Symptoms. Gradual loss of hearing sometimes being more rapid at age of puberty, following intercurrent constitutional diseases, pregnancy, lactation and debilitating conditions and focal infections.

Tinnitus is severe, persistent and prolonged, and is rarely absent in any stage of the disease. Eustachian tube is patent throughout. Vertigo is rarely present.

Bezold's triad symptom complex.

(a) Loss of hearing for lower musical tones.

(b) Prolonged hearing by bone conduction.

(c) Negative Rinne.

Paracusis often present, absence of physical signs of chronic tympanic disease, inflation of tube followed by little or no real functional gain in hearing.

Intensity of sound as conveyed through cranial bones uninfluenced by compression of air in the auditory meatus (Gelle). Schwartze symptom is characterized by isolated areas of hyperemia in the mucosa covering the promontory, as seen through an atrophied, transparent drumhead.

R. A. Barlow reported fifteen cases of the relation of vestibular nerve function and myxedena. He believes that besides the other changes are disturbances of response to stimuli in the eighth nerve tracts which coincide with responses to stimuli in other nerve tracts. It may be due to edema or anemia of the nerve.

Out of five thousand cretins examined in Switzerland twenty-nine per cent. were deaf mutes and twenty-nine per cent. of remainder were hard of hearing.

Kauffman, Creekmur and Schuetz.

Fed three groups of rats.

1. Normal controls.

2. Rats on diet deficient only in fat soluble vitamins.

3. Rats on a diet deficient in both fat soluble vitamins and calcium. They were killed in three months and following changes noted:

That in rats fed on diets low in content of fat soluble A and calcium there were produced pathological conditions in the temporal bone having a fundamental resemblance to rickets. Bowing of foot plate of stapes (suggestive of the yielding of soft bone to external pressure) proliferative changes in region anterior margin of oval window, involvement of the annular ligament, that may, in process of hearing, go on to at least partial ankylosis, replacement of normal dense new vascular bone of labyrinth capsule and

coils of the cochlea by vascular spongy bone, proliferative changes in auditory nervous tissues, all warrant the same changes in the human being to a variable degree.

Robert McCarrison found that in general the effect of food deficiencies on the thyroid and parathyroids are to cause a slight reduction in size and weight in all classes of deficiencies except that of Vitamin C.

The organ is, in consequence of the food fault, rendered peculiarly susceptible to injury by bacteria or toxic agencies which may cause extensive degenerative changes in its cells and congestion.

Hemorrhage into parathyroids is apt to occur when the deficient food is excessively rich in fats and carbohydrates; this combination of faults appears to enhance the susceptibility of these organs to the action of intestinal anaerobes. Without going too far it may be safely concluded that in presence of food deficiencies the functional perfection of the thyroid parathyroid mechanism is very prone to be impaired.

These observations have important bearing on the calcium metabolism in various deficiency diseases. The results of the above experiments coupled with the results obtained in the clinical treatment has led me to believe that otosclerosis is a deficiency disease caused by errors in diet and endocrine dysfunction.

Many of these cases have their origin during pregnancy. During this period, also during lactation, the mother if she has otosclerosis always becomes worse due to the various toxemias of pregnancy and the drain on the calcium content of the blood.

Metabolism is greatly altered by the products of protein metabolism also to the effect of focal infections, especially of enteric origin, and it is commonly observed that the mother has trouble with her teeth during this period. It is found that boiling has a tendency to destroy the various vitamins necessary for growth especially for bony growth. Also due to our modern eating of candies, meats, prepared foods, which are deficient in the various vitamins, causing an acid condition of the blood, there is a back of calcium intake and an increase in the elimination of calcium, therefore the child in utero is deprived of the vitamins necessary for its growth; they are born with certain stigmata which become more manifest as the child grows older. They are particularly prone to develop the various infections, often having what is often called the exudative diathesis. Nearly all these children have enlarged tonsils, adenoids, deafness, etc., the tonsils and adenoids often being removed without relief of symptoms. They gradually become more deaf, and especially about time of puberty, until finally the diagnosis of otosclerosis is made.

Treatment. Every case should be thoroughly studied and treated accordingly. As the calcium imbalance can be found in nearly every case, it will be necessary to feed them calcium in various forms but as this is eliminated very rapidly in various infections, also in high carbohydrate diets, it is necessary to rid the body of any focal infections, also feed the patient on fresh vegetables, fruits, milk and other foods rich in calcium.

The four adjuvants which tend to help fix the calcium are: (a) Parathyroid therapy. (b) Sunlight. (c) Air cooled ultra violet ray, also feeding of phosphorized cod liver oil.

The thyroid is the regulator of protein metabolism and also tends to rid the blood of any toxemia. It is therefore involved in most of these cases.

Suprarenal, pituitary and ovarian hormones also have a great influence on the growth and vasomotor control and are therefore indicated in certain of these cases.

Conclusions. 1. Otosclerosis is caused by deficiencies in certain vitamins in the diet, and various endocrine dysfunctions.

2. It is generally developed during intrauterine life.

3. It is aggravated by the various infections during child and adult life often being relieved a great deal by getting rid of the focal infections.

4. It is aggravated at time of puberty, pregnancy and during lactation.

5. It is helped a great deal by proper diet and endocrine therapy.

Lincoln Theatre Building.

BIBLIOGRAPHY

Haberman, Arch. F. Ohrenh. B. D. L. X.
Korner. Heredity of Otosclerosis; Archives of Otology, Amer. Edit.
Denker. Die Otosklerose.
Kerrison. Text Book of Otology.
Gray. Otosclerosis. H. K. Lewis & Company.
Gray. Otosclerosis. Review of J. S. Fraser.
Journal Laryng. & Otol. Vol. XXXIII. Page 16.
R. A. Barlow. Amer. Journal Med. Society, Sept., 1922.
Kauffman, Creekmur & Schuetz.
Journal A. M. A., March 10, 1923.
Robert McCarrison, Text-Book: Deficiency Diseases.

THE VIABILITY OF GONOCOCCI IN WATER*

BENGT NORMAN BENGTSON, M. D.,
CHICAGO

The above problem was suggested to me by visitors at a natatorium, who persisted in asking questions relative to the danger of infection from a possible venereally tainted water. The literature being indefinite I devised a series of experiments to determine, if possible, how long the organisms of gonorrhea could retain their vitality when immersed in water.

Welander[1] took virulent morning drops and exposed them on small squares of cloth. Later, at intervals, he moistened these cloths with physiological saline and injected the expressed material into healthy human urethrea. He obtained one suggestive result in which an injected urethra gave rise to a clear secretion containing many epithelioid cells but no gonococci. Presumably the infection was pyogenic. He then placed fresh drops into vaccine glasses, sealed them, and kept them warm by putting them into his vest pocket. At intervals he reinjected the contents and obtained one positive reaction from gonococci which had been outside the body for three hours. McClintlock and Clark[2] investigated the mechanism of autolysis in culture and various substances which inhibited the growth of the gonococci, such as trikresol, alcohol, and heat, but did not include the time factor. Culver[3] obtained colony growth of the gonococci after they had been immersed in one-fourth per cent. silvol for a half hour, and in one-eighth per cent. argyrol for one hour. The liquid media in each instance was hydrocele fluid so that the silver salts alone were the inhibiting agents, plus any possible autogenous deleterient from the organisms themselves. Herrold was able to culture gonococci which had been placed all night in urine. Ruggles[16] cites a case where a patient had gonorrhea for ten years. These reports would seem to indicate that the gonococci are not as susceptible as various text-book authors claim.

As a preliminary observation, I placed gonococci in a hanging drop of tap water. Considerable Brownian movement was seen which gradually became less. A certain amount of clumping was noted, this latter phenomenon being easily interfered with by gentle heat. Single organisms were watched carefully. After variable periods individual organisms suddenly disappeared leaving only a finely striated appearance which also soon became lost to view. Although no perceptible difference in size of the gonococcus was observed, the sudden disappearance was most probably due to rupture of the capsule because of endosmosis.

The time factor of disappearance was variable. The shortest time was eighteen minutes, and the longest was forty-three minutes. Difference in the time element can possibly be explained (a) by the age of the particular coccus under inspection, (b) previous environment, and (c) presence or absence of endogenous autolytic substances (McClintlock.[2]) Visibility does not parallel vitality, nor does vitality necessarily parallel pathogenicity. If, however, the gonococci after a given time of immersion could be made to grow on suitable media, there is at least the possibility of pathogenesis.

There are almost innumerable varieties of media listed in the literature as being suitable for gonococci culture. Herrold[4], Hagner[5], Heiman[6], Bush[7], Griffon[8], Wherry and Oliver[9], Turro[10]. I finally selected one used by Herrold(*). Later, I used heavy blood agar (ratio 2:5) and substituted di-basic sodium phosphate for the sodium chloride content and obtained excellent growth.

A culture of gonococci (Strain No. 34, see Torrey[4]) was obtained from which transplants were made. Test tubes each containing ten c.c. of water were arranged as follows: Series 1 contained sterilized tap water and was divided into three portions; the first was placed in the ice-box; the second in the incubator, and the last portion was allowed to remain at room temperature. Series 2 contained sterile distilled water, and Series 3 contained sterile tap water and copper sulfate (ratio 1-1,000,000). They were likewise divided into three portions and each portion treated as Series 1. The reason for using the copper sulfate in this strength was that this is as it is used at natatoriums for germicidal and fungicidal effects.

The tubes of water were withdrawn from their various places as occasion required. From the culture of gonococci a loopful was taken and immersed into a tube of water. The tube was

*From the Department of Pathology and Bacteriology, College of Medicine, University of Illinois, Chicago.

*Phosphate-ascites-agar. 15 grams agar-agar. 10 grams Witte's peptone. 480 grams lean beef. 1 gram di-basic sodium phosphate. 1 liter of distilled water (PH 7.5-7.8).

immediately put back into its proper place. Each succeeding minute a loopful of innoculated water was withdrawn and smeared on plates of warmed nutrient media and immediately incubated. After twenty-four and forty-eight hours respectively, the plates were examined and smears made of all suspected positives and treated with Gram stain.

EXPERIMENT 1

Using Strain No. 34 which had been transferred on nutrient media twenty times

Temperature	Death in Sterile Tap Water After	Death in Sterile Distilled Water After	Death in Sterile Tap Water & $CuSo_4$ After
37°	22 Min.	25 Min.	18 Min.
Room Temp.	22 Min.	21 Min.	19 Min.
Ice-box Temp.	18 Min.	13 Min.	11 Min.

EXPERIMENT 2

Using Strain No. 34 which had been previously transplanted ten times

Temperature	Death in Sterile Tap Water After	Death in Sterile Distilled Water After	Death in Sterile Tap Water & $CuSo_4$ After
37°	20 Min.	18 Min.	19 Min.
Room Temp.	16 Min.	11 Min.	20 Min.
Ice-box Temp.	9 Min.	7 Min.	7 Min.

EXPERIMENT 3

Using Strain No. 34 after having only 2 transplants; 1 for isolation, 1 for growth

Temperature	Death in Sterile Tap Water After	Death in Sterile Distilled Water After	Death in Sterile Tap Water & $CuSo_4$ After
37°	13 Min.	11 Min.	11 Min.
Room Temp.	12 Min.	9 Min.	10 Min.
Ice-box Temp.	9 Min.	8 Min.	6 Min.

The above time factors represent the average of two separate experiments made with each sub-group and a duplicate plate for each experiment.

It is evident that the gonococcus varies widely in susceptibility. However, it seems far less susceptible than is generally thought, for it is capable under adverse conditions of maintaining life for many minutes. The organism is apparently more susceptible in cold water, and it seems to have greater resistance in salt containing water than in salt free water. The action of the copper sulfate solution is probably a double one due to the salt splitting into the SO_4 radical and the ionized copper, the former acting merely as additional salt concentration, and the latter acting as a weak germicide.

The age of the organism and whether or not it has been artificially cultivated bears a relation to its resistance. From the above tables, it is seen that the longer the organisms have grown on artificial media, the greater is their resistance to water.

The question as to whether the organisms are capable of pathogenesis at the end of the time limit specified in the charts is difficult to decide since animal innoculation is not practical (Heiman[6]). The fact that the gonococci can grow on media after their immersion would indicate at least the possibility of pathogenesis. As to a possible infection from an innoculated swimming water, the chances seem small indeed, even though the cocci might be pathogenic after many minutes in the water.

The swimmer exposed to such infection is being bathed constantly by rapidly circulating water about him due to his own exertion, which would serve to wash away any material lodged on susceptible surfaces. The organisms which might become fixed on a mucous membrane are probably far fewer in number and more attenuated than gonococci implanted there in the usual way. A decreased protection of the mucosa or skin due to water maceration is theoretically possible.

While there are instances cited, especially in young girls, of vulvovaginitis acquired from water contamination, it is always difficult to prove such cases. Skutsch[12], Morris[13], Epstein[14], Williams[15], Heiman[6]. Skutsch states an instance where 236 school girls were attacked with vulvovaginitis of gonorrhea following bathing. Generally speaking, in natatoriums where proper sanitary precautions are taken, and with frequent changing of water or the addition of some water disinfectant, like chlorine, lime, alum, copper, sulfate, etc., the danger of infection should be very small.

The question arises as to the mechanism of the action of water on the gonococci. A number of inhibiting and destructive factors may be mentioned, but there is difficulty in evaluating them. Among the more important are osmotic relations, oxygen requirements, a low or unfavorable temperature and a definite toxic action of the water on the organisms.

Summary. Conococci may live many minutes in water depending on temperature, salt concentration, and age of organism. Danger of infection would seem to be very slight.

BIBLIOGRAPHY

1. Welander, E.: Några försök att utröna gonokockernas vitalitet utanför menkokroppen. Hygiea, Stockholm, 1886, xlviii, 671-678.
2. MacClintock, C. T., and Clark, L. T.: Autolysis of the Gonococcus. J. Infect. Dis., Chicago, 1909, vi, 217-223.
3. Culver, H.: Gonococcidal action of protein silver solution in vitro. J. Lab. and Clin. M., St. Louis, 1917-18, iii, 487-93.
4. Herrold, R. D.: Simplified plate method of partial oxygen tension for cultivation of the gonococcus. Proc. Chicago Path. Soc., 1920-21, xi, 113.
5. Hagner, F. R.: Successful cultivation of the gonococcus in two cases of gonorrheal arthritis and one of taenosynovitis with remarks on a new media. Johns Hopkins Hosp. Bull., Balt., 1897, viii, 121-124.
6. Heiman, H.: Clinical and bacterial study of the gono-

coccus in the urethra and vulvovaginal tract of children. Med. Rec., N. Y., 1895, xlvii, 769-778.
7. Busch, F. C.: Cultivation of the Gonococcus. Med. News, N. Y., 1898, lxxii, 431-33.
8. Bezoncon, F., and Griffon, V.: Culture du Gonocoque sur la sang gelose. Compt. rend. Soc. de Biol., Par., 1900, 11s, ii, 647.
9. Wherry, W. B., and Oliver, W. W.: Adaptation to certain oxygen tension as shown by the gonococcus and other parasitic and saprophytic bacteria. J. Infect. Dis., Chicago, 1916, xix, 804.
10. Turró R.: Gonokokkenzüchtung und künstlicher Tripper. Centralbl. f. Bakteriol. u. Parasitenk., Jena, xvi, 1-5, 1894.
11. Torrey, J. C., and Buckell, G. T.: Serological study of the Gonococcus group. J. Immunology, vii, 305-359, July, 1922.
12. Skutsch, R.: Ueber Vulvovaginitis Gonorrhoica bei kleine Mädchen. Jena, 1891.
13. Morris, J.: Vulvovaginitis through Clothes. Virginia Med. Monthly, 1878.
14. Epstein: Vulvovaginitis Gonorrhoica bei kleinen Mädchen. Beitr. z. Dermat. u. Syph., 1891, ii, 3-33.
15. Williams, J. W.: Vulvovaginitis in Children. Maryland, M. J., 1892, xxvii, 705-12.
16. Ruggles, E. W.: Longevity of the Gonococcus. Buffalo M. J., 1900-01, n. s., xl, 315-319.

LIMITATIONS OF THE CHLORINE GAS TREATMENT

F. L. Alloway, M. D., & C. S. Bucher, M. D.
CHAMPAIGN, ILL.

The growing idea that the chlorine gas treatment is a panacea for all nasal and throat ailments, is a fallacy. In fact, it has a rather limited field. The technic of its administration is also quite a factor in getting results.

A summary of two hundred cases treated by our method is here given.

The gas is administered in a room ten feet, six inches long, by nine feet wide and eleven feet high, making one thousand thirty-nine and a half cubic feet. This space requires one hundred and seventy-five parts of gas at all times during the treatment. It is not necessary to have the room entirely closed; we leave one window open six inches at the top, otherwise it is air tight. The gas being heavy, sinks to the floor and does not readily escape through the open window. A small electric fan placed on the floor keeps the gas moving at a higher plane.

The proper amount of gas should be liberated in the room with the entrance of the patient or patients. Then measuring Burette recharged with a corresponding amount of chlorine gas which should be permitted to gradually seep into the room during the next forty-five minutes. This amount is necessary to replace that which is inhaled by the patient and taken up by the walls and contents of the room. If the gas is permitted to enter the room in gulps or noticeable quantities it will be likely to cause irritation of the throat, followed by coughing. The quantities admitted should be so small as to be hardly perceptible to the patient.

If more than one patient is taking the treatment ten parts of gas should be added. For three patients add twenty parts, both in the original release of gas and the subsequent seepage; but do not add for more than three.

To recapitulate, one person taking a treatment in a room containing one thousand thirty-nine and a half cubic feet of space, introduce one hundred and seventy-five parts of gas during the course of an hour. Add by seepage method one hundred and seventy-five additional parts. If two persons are taking the treatment in the same room, introduce one hundred and eighty-five parts, making a total of three hundred and fifty parts of gas. For three persons or any number above three, introduce one hundred and ninety-five parts, adding one hundred and ninety-five parts by seepage during the hour.

The proper amount of chlorine in a room should be plainly noticeable by the odor and by its producing a very slight irritation in the posterior part of the pharynx. The conjunctiva of the eye may be slightly irritated. If the patient hacks or coughs, the gas is seeping in too rapidly.

Of the two hundred cases treated, thirty were relieved by the first treatment, ninety required two treatments, fifteen, three treatments, before relief of acute coryza symptoms. Sixty-five did not benefit very much by the treatment owing to nasal pathology that required operative procedure. Five cases of whooping cough responded favorably after six treatments.

This treatment should under no consideration be in the hands of the laity. It is a medical treatment requiring careful adjustment, as well as a correct diagnosis of the case. All patients should be examined by competent nose and throat men before the treatment is given.

209 University Ave.

TONOMETRY*

Harry S. Gradle, M. D.,
CHICAGO

I have only one particular thought that I wish to impress in discussing the question of tonometry today, viz.; that tonometry is a question of relativity. Of course tonometry is not new. Even before the time of von Graefe, tonometers were on the market and to my definite knowledge

*Read at meeting of Illinois State Medical Society, at Springfield, May 7, 1924.

there have been at least seventeen different tonometers advocated by different men. They have all been of one or two types, the application or depression tonometer. The first type has gone into the discard. The second or depression tonometer has centered itself upon one basic principle, viz.: that advanced by Schiotz, in which the instrument itself of definite weight is put upon the eye and a further depression of the cornea is induced by a stilette upon which a weight of known quantity rests. The amount of depression of this secondary weight is then read off on a scale and translated empirically into milliameters of mercury. I say empirically, because it is purely that. The tonometric pressure of the eye, as we understand it, is not the absolute pressure of the eye, in any sense of the word. Nor does it bear any definite relationship to the manometric pressure. The intra-ocular pressure may be measured by means of the manometer. This is fairly accurate, although slight variations may occur. However, the tonometric pressure measured with the tonometer does not bear a constant relationship to the manometric pressure, because there are so many qualifying factors that are introduced. To mention a few of these, we might say that the tonometer is constructed for the theoretical eye and an eye that varies from this theoretical perfection will influence the tonometric reading; for example, the radius of curvature of the anterior surface of the cornea. Tonometers are manufactured for a corneal radius of 7.8 mm. If a variation of even less than one-half of a millimeter occurs, there is sufficient to cause a variation in the tonometric reading. The rigidity of the cornea plays a rule and this rigidity is dependent not only upon the adherent tissue of the cornea itself but also upon the variations in thickness of the cornea. The rigidity of the sclera plays a great role. The relationship of the depth of the anterior chamber to the depth of the lens plays a role. The patency of the anterior chamber angle plays a role. The relationship of the intra-ocular pressure to the systemic blood pressure, and in turn the relationship varies day by day and hour by hour. These things all influence the tonometric pressure. Therefore, we can not say that the intra-ocular pressure as read on the tonometer is the pressure of the eye. It is an empirical figure, which bears a varying relationship to the manometric pressure of varying eyes.

Let us, for instance, take a case where we measure manometric pressure. This will vary from hour to hour, starting in low in the morning and rising slightly during the course of the day and sinking again at night. The tonometric pressure as measured may be above or below. But, in any one eye that tonemetric pressure will bear a constant relationship to the manometric pressure. In other words, let us say empirically that the tonometric pressure in one eye may be 10 mm. above the manometric pressure. That variation of 10 mm. will be sustained in that eye unless there is a change in the anatomical configuration. In another eye, however, the tonometric pressure will be only 5 mm. above the manometric, but that 5 mm. difference will be maintained continuously. And this is of great importance in the use of the tonometer, because it puts the tonometer on the basis of relativity. The absolute measure of intra-ocular pressure as made with the tonometer is worth nothing. It does not make a particle of difference what the tonometric pressure is as recorded in one measurement because we do not know what are the upper or lower limits of normal tonometric pressure for the one eye. We do not know whether the difference between the manometric and the tonometric pressure is one millimeter or five millimeters. Therefore, one measurement with the tonometer is of no value at all. But the measurement, day by day or hour by hour, to show the variation in pressure of that eye, is of value. It is a question of relativity. Therefore, our tonometric measure must be made in the form of a curve before it spells anything to us at all.

We say empirically that our limits of the normal are from 13 to 25 mm. of mercury, as measured with the Schiotz tonometer. That may be perfectly true if we are dealing with an eye that is anatomically perfect, as related to the Schiotz tonometer. But, in another eye that has a different radius of curvature or a slightly different thickness of cornea, those limits will not hold at all.

Thus the absolute measure of pressure with the tonometer in any one eye means nothing. It is the relation of the measurement made one day to the measurement on the following and the following or third day that is of value. And

that relationship expressed in the form of a curve is of inestimable value in cases of hypertension.

There are one or two other minor points we must lay stress upon in our tonometry, because it is almost impossible for us to make such tonometric measurements perfectly. The tonometer is so constructed that it must be applied directly over the central area of the cornea, and, furthermore, the eye must be so located that the anteroposterior axis of the eye is directly vertical and that the stilette of the tonometer is a continuation of that anteroposterior axis of the eye. That sounds simple but in practice it is extremely difficult to have the patient hold his eye in a satisfactory position so that the anteroposterior axis is vertical and so that the stilette is a continuation of that anteroposterior axis. Variation of 1 mm. or more from the central location of the cornea and the deviation of maybe only eight degrees from absolute verticality is sufficient to introduce an element of error into the tonometric measure that may vitiate the entire result. Again all pressure must be eliminated. In the average eye it is easy to pull down the lower lid against the zygoma and to elevate the upper lid against the superior rim of the orbit, so that all pressure is removed, but in some eyes it is not so easy, particularly in eyes of the protruding type. And in those eyes we are apt to have intraocular pressure registered by the tonometer higher than it actually is.

Again, the posture of the patient makes a difference. Many men are inclined to use the tonometer with the patient seated and the head thrown back resulting in pressure on the jugulars and in the normal eye there is a slight variation of intraocular pressure coincident with the blood pressure.

Furthermore, the time of day that we use our tonometer makes a difference. In order to attain satisfactory results, tonometry should be practiced at relatively the same time each day.

Of course there is no need of telling you that the corneal anesthesia must be complete and it should be of the type that does not produce any dilatation of the pupil.

Now, as to the tonometer to use, the most satisfactory today is the Schiotz and its modifications. That has stood the test of time far better than anything else and it is based upon correct principles. There has been made another tonometer in this country that has attained great favor, unjustly, I believe, because the designer of that tonometer endeavored to introduce a different standard of tonometric pressure from that introduced by Schiotz. But, granted that the relation of the pressure, as recorded by the Schiotz, to the manometric pressure is not correct for any one eye, in this other instrument a different standard is endeavored to be introduced, which is apt to be confusing and is no more correct than that introduced by Schiotz.

Furthermore, in the other instrument there is no possibility of checking up the measure because there is but one weight of a definite value without any possible variations, whereas the Schiotz has the principle of using weights of different values in order to check the measurements, realizing, as he did, the almost impossibility of obtaining a central position for the tonometer itself.

As I say, tonometry is a question of relativity. Do not place any weight upon one measurement of an eye by the tonometer. Suppose we do take an eye and obtain a reading of 28 mm. of mercury. Theoretically that is a pathological tension. Actually it may not be pathological in the slightest degree. It is only by a comparison of that tension from day to day, taking into account the other clinical factors that we can obtain the value from tonometry that the instrument justifies.

DISCUSSION

DR. CLARK W. HAWLEY, Chicago: I want to emphasize what Dr. Suker just said in regard to the fingers. I discovered a good many years ago that the two front fingers were not as good as the front finger and that one (indicating second finger). If you take these two fingers you will find you can measure a much more delicate tension than you can with those two. That is all I want to call your attention to. I discovered that a good many years ago and have taught it in my clinic and have shown the students the same thing and they have always recognized the difference. And if you will test it on the eye you will see it yourselves. You will find you can make a different tension entirely than you can with those two fingers.

So that if you take these two fingers, just as Dr. Suker said, I think you will find you get more delicate impression than you will otherwise.

THE PROBLEM OF QUACKERY*

A. MILTON COX, M. D.,
MADISON, WIS.

The subject of present day quackery problems is one which I personally believe to be of considerable importance to us as practitioners of what we are pleased to term the regular school of medicine, and who are, for the most part, members of the recognized medical societies and organizations; I contend that it is in every way a fitting and proper subject to be taken up for discussion and to be dealt with by the regular medical profession in their councils, as a duty not only to themselves, but to a certain extent, also, for the protection of the general public as well. And while I do not care to be regarded as one with an ax to grind, or as one who is out with a sharp javelin after any particular cult or species of the genus quack, I may, for the purpose of stressing a point, herein, see fit to refer to one or more of the groups of especially flagrant violators of what we know to be principles of propriety and common honesty.

Much has been said during the past few years by certain of the members of our regular medical organizations both in the literature as well as in oral discussion concerning the menace of this increasingly grave problem of quackery, but so far as I am personally aware, there has been little accomplished thus far, by any individual or organization which would tend in any appreciable degree, to place a direct hindrance upon the exploitation of a somewhat gullible public by the charlatan, and little attempted except criticism. I do not wish to be understood here as attempting to inveigh against a constructive form of criticism, as this is well merited, but I do wish to emphasize the point that criticism and condemnation alone, will get us nowhere in the accomplishment of the end desired, viz.: a suppression of, or at least a control over some of the present conditions which make possible the vast array of fakers.

It occurs to me that one of the first things which might be properly considered here, is where the responsibility may be placed for the increasing multitude of quacks. An impartial investigation and a study to determine this cause or the causes, rather, for the evidently flourishing condition of the quack and his ever-increasing numbers will disclose a considerable number of things which contribute to this end.

First of all I think we might consider the irregular himself and his cohorts. We must give him credit for being alive to his opportunities. Taking advantage, as he does, of the gullibility and credulity of the public he blatantly and incessantly espouses his cause in the public press and by constantly besieging the public with his revelations of miraculous and marvelous cures (sic) thus endeavoring to glorify his spurious skill, many of the deluded ones are led to hearken, and to go on to their undoing, many times unknowingly. I refer here, particularly to one class of irregulars whom I apprehend you will have little difficulty in identifying, only because of the fact that their numbers are, and for some time previously have been, more rapidly augmented than perhaps that of any other, but there are others and their name is legion, against whom I also make the same accusations. Referring especially to the "expert" spinal manipulators, it should be noted the ease with which they secure their permit to operate after a brief sojourn within the "temples of knowledge" where a zeal worthy of a better cause is instilled into the faithful in lieu of scientific knowledge and acumen, and aided and abetted as they are, by a certain percentage of the dear public who seem to have a special predilection for being humbugged, and further by a somewhat vicious state and federal legislation whereby they are permitted to practice their so-called art upon equal terms with the regular profession, allowed in many states to sign death certificates and to treat all manner of diseases, both imaginary and real, and whose victims as we well know are not recruited alone from the ranks of the so-called lowly, so far as apparent mental equipment and financial status goes, but who have for many of their regular "customers," persons of apparently nearly average mental capabilities, who are led to fall for the "bunk" of the manipulator after said manipulator has induced in them a proper psychologic state, and is thereby readily led to part with some of his superfluous shekels, and made "to like it," as the street vernacular goes. And here an interesting observation may be made concerning the collection methods of the irregular, whose system is a model so far as results are concerned, as he usually gets his fee on the

*Address before the Dane County, Wis., Medical Society, April, 1924.

spot and not infrequently in advance, and it is perhaps not amiss here for some of us to take a gentle hint, and go and in a measure seek to do likewise, at least with a certain class of individuals, as I have been constrained to do many times in selected cases, acquainting people with the fact that I was quite sure that I was at least as much entitled to an early payment of my fee as was the irregular, and have even extended my remarks much further along this line when occasion required, and with a considerable degree of success and satisfaction, I am pleased to state.

None the less reprehensible is the conduct of the man who has at some previous time had the honor of having the degree of M. D. conferred upon him by some more or less reputable school and who in many instances, has at least a fair degree of medical knowledge but who has chosen to travel the forbidden path having a disrespect for all ethical standards and perhaps not being able to make a go of it in a legitimate way, and also many times holding some grudge against the regular profession, but mainly for the reason that he can see nothing but the almighty dollar as the one means of inducing for him a state of happiness and contentment, and so prostitutes the high principles of his art for material gain.

Another causative factor which inadvertently assists the quack to flourish and prosper is the willingness of the lay press to give space in their organs to the ridiculous and manifestly erroneous claims which are so frequently made in their advertising propaganda, and it is a notable fact that there are comparatively few of the lay newspapers and periodicals which will refuse this class of advertising, the vociferous and false statement of the common quack and the patent medicine exponent occupying space which might well be filled with something of value or importance to the general public instead of providing information whereby they may deplete their already none too obese purses and not infrequently, also, prove detrimental to their physical well-being, and I consider that there is no good excuse for entering a plea of ignorance concerning the falseness and impropriety of the subject matter furnished by these unscrupulous individuals. The position which I hold in this regard is not taken so much because of the fact that we who are members of the regular medical profession are fettered by a chain of ethics which denies us the privilege of attempting to advertise ourselves as seeking business or patronage from the public, but rather as the result of a righteous wrath having been aroused in me by the evidence of an entire falsity and greed displayed by these charlatans in the matter of attempting to deceive and even intimidate the public as they frequently do by their coarse and ludicrous methods of endeavoring to belittle and ridicule the work of the honest and capable members of the regular medical profession.

Casting about for further reasons why the quack exists, one or more of the causes may be found to exist within our own ranks. It is not difficult to observe that among a large percentage of the members of our profession there exists a somewhat marked apathy toward this subject as well as many other matters which are of much practical importance to us, and this apathy has lead to an inertia which the quack seeks to, and as a matter of fact has, taken advantage of with an accomplishment and success which is somewhat exasperating to one who has the best interests of the profession and the public at heart, when they note with despair, the unfavorable legislation which has been passed throughout the country in many states during the past few years, particularly. Not alone in this respect do many of the members of our profession assist indirectly the quack in his exploitation of the public but also in another and equally regrettable manner by his occasional failure to give to his patient the efficient and proper service which the condition requires; this many times thoughtlessly, in neglecting to give the proper amount of time and study to the case at hand and unfortunately, also by his failure to utilize every available method which might assist him in first arriving at a proper diagnosis of the condition presented. This is especially true of the chronic cases, the type of case from which the charlatan largely recruits his victims. Some of us also occasionally fail to make use of some of the indicated therapeutic measures which research and experimentation have proven to be valuable contributions to the physician's armamentarium, and while we well know that the rank and file of the profession is both honest and efficient, there are, we must admit, exceptions to the rule and this recognized fact has played at least some part in contributing to the existing state of affairs with which we have to deal as before intimated.

So much for the causative factors of the condition with reference to the problem considered, and now a consideration of the "cure." It is too much to hope, I fear, that a definite and permanent cure may be brought about, but we may, I am sure, reasonably expect a betterment or an improvement in the condition if we are willing and do apply the appropriate remedial agents, and here, one of the first things to be done in instituting the indicated treatment is to apply, first of all, the same principle which is applicable in most of the other pathologic states with which we are confronted daily, viz.: remove the cause and the condition will ultimately take care of itself, with perhaps the addition of a few well directed measures which are indicated and which I shall mention.

So far as I am able to determine there has been little accomplished by any agency or organization along this line and it is my contention that the movement for the betterment of existing conditions with reference to quackery problems should be initiated by the regular medical organizations which now exist, and hardly believe that it will be necessary, as has been suggested to have additional organizations of our members designed to functionate rather for the purpose of stressing our economic needs, and paying more attention to the business aspect of the matters pertaining to our work which are of vital interests to all of us, as well as continuing the ones which we now have which rather labor for scientifice advancement and the protection of the public welfare, but there is a thought contained in the above suggestion which may in time have to be seriously considered.

I think you will agree with me that we are remiss in our duties to ourselves if we fail to give at least as much time and energy and as much thought to the matter of the dissemination of a true and legitimate form of propaganda as do the irregulars who seek to further their own interests by pseudo-propaganda.

I do not wish to unjustly criticize anyone for laxity or neglect in this regard but do not hesitate to express it as my opinion that our esteemed parent organization, the A. M. A. have not thus far performed their whole duty in this respect, and it appears to me that in addition to the work which they have done to show up and discredit the nostrum and quackery exponent and the patent medicine vendor, which is all very well of course, but the result of the work which they have done along this line does not get the publicity which it merits, owing to the fact that the reports of same are confined to a publication in the official organ of the society, viz.: the Journal A. M. A., which is read by practically no one except the physician himself. The periodical which they have recently established and in which is inaugurated a sort of propaganda for enlightenment of the laity concerning some advances of scientific medicine is a worthy effort but is rather mild in its characterization of quackery operations and I am afraid does not get as wide a circulation as should be given a publication of this character. I refer to the magazine called "Hygeia." It is my belief that they could and should work to disseminate a much needed form of information concerning the merits of modern scientific medicine and the exposure of quackery practices through additional channels, as we know that comparatively few of the so-called laity are familiar with the very commendable work which has been, and is still being performed, by many conscientious, unselfish and capable scientific workers in the field of medicine who by their extended methods of research and investigation have made possible the present high plane upon which modern medicine rests, emphasizing, also, that this work shall continue despite the many petty annoyances and impositions with which they have to contend by the exponents of quackery and a somewhat unenlightened and unappreciative public. Why should not our leading society also make use of the daily lay press and other publications and spend at least a mite of their wealth to purchase space wherein the advancement and merits of modern medicine might in a measure be exemplified. And indeed why not also, the use of the now almost universally used instrument, the radio, to broadcast talks by well informed medical men on subjects pertaining to scientific medicine and its accomplishments, as for instance the Schick test, the value also of typhoid inoculation, of tuberculin, diphtheria antitoxin, the Pasteur treatment, the use of insulin and a host of other remedial and prophylactic agencies which have contributed so greatly to the accomplishments of modern scientific medicine and the resultant

effect upon the mortality and morbidity of disease.

We know, of course, that a few of the state societies have recently taken it upon themselves to initiate a campaign intended to counteract in some measure the ravages of quackery and such an effort is a very praiseworthy one and we bespeak for it a considerable degree of success, and it behooves us as members of the societies to assist in every possible manner the furtherance of this effort, and also seek to enlist the aid of those of the profession who are not yet members of our societies, that a united front may be presented in the fight as this is essential to the success of the campaign, and we must realize further, that such a united effort does not at all excuse an individual effort but rather makes this more obligatory, and should remember also, that in this as in all other campaigns of any character, that we will get only as much out of it as we put into it, so there must be no shirking of our obvious duties in this regard. An effort by the officers and members of our present state and county societies to increase the membership in same is likewise of importance, this for the common good. Finally, we should henceforth strive to establish a closer bond of professional and social relationship among ourselves, realizing that this factor has been too much neglected in the past, and when the proper spirit of cooperation and friendliness is made more manifest among us, then will it come to pass that a higher grade of professional work and other accomplishments which we seek may be expected, and will inevitably result, and then also for all of us will be ushered in the dawn of a better day.

FURTHER OBSERVATIONS ON THE USE OF CONVALESCENT SERUM IN THE PROPHYLAXIS OF MEASLES*

GEORGE H. WEAVER, M. D. & T. T. CROOKS, M. D.
CHICAGO

In a recent paper[1] the results of our work with convalescent serum as a protective against measles at the Durand Hospital were reported. It concerned 57 susceptible children who were exposed to measles. Nine of these were not given serum; all developed typical measles. Forty-eight were given 5 to 10 cc. of convalescent measles serum; 44 were protected and 4 developed measles. Of the 4 developing measles, 3 were given the serum 8 to 12 days after exposure; I was given the serum the day of exposure and developed a typical form of measles 15 days later. There was only 1 failure in 45 children given serum within 4 to 5 days after exposure. In this paper the literature on the use of serum in measles was fairly thoroughly reviewed, so that only more recent articles will be mentioned here.

Zingher[2] in New York City has had some interesting results. Of 102 children receiving convalescent serum, 92 were protected. Of the 10 developing measles, seven were given the injections on the eighth day of exposure and developed a modified form of measles with incubation periods of from 16 to 22 days.

Davis[3] gave convalescent serum to 52 susceptible exposed persons with 50 protections. Of the 2 who developed measles, 1 had a typical case, and the other a mild atypical attack which would scarcely have been recognized unless one were watching for the appearance of the disease.

Adler[4] reports the use of whole blood from convalescents or adults who have had measles for protecting young children. Of 18 children in his private practice given from 20 to 30 cc. of whole blood from 4 to 8 days after exposure, 5 were completely protected, 12 had mild atypical measles and I had a typical attack. This is the first report seen on the use of the blood or serum in private practice. Adler says the method is so simple that any general practitioner may safely use it.

H. Cambessedes and P. Joannon[5] report the successful use of convalescent serum in preventing measles in several of the hospitals and crèches of Paris. During the winter of 1922-23 severe outbreaks of measles occurred in Paris; in one crèche there were 36 cases and 17 deaths among 38 infants. By the prompt use of convalescent serum it was found that measles could be quickly stamped out in these institutions.

In our additional series, 100 susceptible exposed children were given convalescent measles serum. Of these 81 were entirely protected; 9 developed a mild atypical form of the disease, and 10 had typical measles.

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wis., Oct. 27-31, 1924.
*From the Durand Hospital of the John McCormick Institute for Infectious Diseases, Chicago.

TABLE I

Cases given serum	Age	Days between exposure and administration of serum	Result: No measles	Result: Atypical measles	Result: Typical measles
25	4 mos.— 6 yrs.	1	23	2	..
10	4½ mos.— 4½ yrs.	2	10	..	..
12	18 mos.— 4½ yrs.	3	10	..	2
12	6 mos.—10 yrs.	4	12	..	..
13	8 mos.—10 yrs.	5	11	1	1
10	15 mos.— 9 yrs.	6	5	5	..
7	21 mos.—14 yrs.	7	6	1	..
5	2 mos.— 4 yrs.	8	4	..	1
1	3 yrs.	12	..	..	1
4	18 mos.— 3½ yrs.	14	..	..	4
1	13 mos.	16	..	..	1
100	2 mos.—14 yrs.	1-16 days	81	9	10

In Table 1 are shown the results of the use of serum. One child was not given serum and developed typical measles in 14 days, while others exposed at the same time in the same institution and given serum one day after exposure were protected. Of the 10 children who developed typical measles following the use of serum, 7 were given the injections 5 days or more after exposure. The 3 who had an unmodified form of measles were reported as exposed 5 days previously.

Many of these cases are from the private practice of physicians in Chicago who often dated the exposure from the appearance of the rash in another child in the family. Measles is contagious during the catarrhal or pre-eruptive stage so that in some of these cases exposure is undoubtedly 3 to 4 days longer than reported.

Supposing that the reported exposures are correct, there is a failure to protect in only 3 of 72 injected with measles serum within the 5-day period. These children were given the same lot of serum as many of the others and in the same manner and amount. Why convalescent serum fails to protect against measles in some cases is unknown. Most investigators report from 2 to 4 per cent. of failures even when the injections are given within the first 5 days of exposure.

The protection afforded after 5 days of exposure to measles by convalescent serum is more uncertain. Of 35 children given serum 5 to 8 days after exposure, 7 developed apparently unmodified measles, 7 developed a very mild form, while 26 were entirely protected. Of 6 children exposed to measles for 12 to 16 days before serum was given, there was apparently no protection or modification of the disease. There is thus considerable protection afforded even up to 8 days after exposure, but the best results are secured when the serum is given within 4 to 5 days after exposure.

The 9 atypical cases are an interesting group. These forms vary in intensity from a light attack in which the child may have some slight catarrhal symptoms, a transient rash of 1-2 days and a moderate elevation of temperature to 101-102° for a day or two to very light transient cases which would pass entirely unrecognized if one were not constantly on the watch for symptoms. If one could standardize the dose and time of administration accurately, it would perhaps be better in many cases to give the child just the amount of serum which would permit it to develop a mild abortive attack of measles with its actively immunizing effect rather than to protect it passively by a larger dose of serum and leave it susceptible to measles after a few weeks. In time such a dose of serum may be standardized.

The cases reported last year were largely in hospitals and in institutions where the length of exposure was usually limited by the isolation of the case of measles. This year the cases were largely in private practice where the time and intensity of exposure were usually greater than those in institutions. Yet the degree of protection is about the same in the two series.

One interesting group of cases this year occurred in a large summer camp for boys. A few days after the opening of the camp, a boy came down with measles. As an attest of the activity of this lad and the virulence of the infection, 12 additional cases developed 12 to 16 days later. While it was difficult to find out with certainty how many more boys were susceptible, 12 who had no history of previous measles were given measles convalescent serum 5-6 days after the second crop of measles appeared in an effort to prevent an extensive third crop from developing. No more cases developed in the camp. Supposing that the 12 secondary cases were as effective in spreading the virus as the original case, there should have been a general epidemic among the remaining susceptibles. By prompt isolation and the use of protective serum, the disease, which was beginning to assume epidemic proportions, was checked in the second generation.

The method of securing serum and preserving it has been described previously.[1] We have used a 5 cc. dose in all cases without any attempt to

graduate the amount to the length of exposure and the age of the patient.

An experience with one family would indicate that a dose graduated as to age might be advisable. One child in a family of 6 children came down with measles. On the sixth day of exposure, the remaining 5 children ranging from 2 to 9 years were given 5 cc. of serum. Twelve days later, the oldest, 9 years, developed a mild atypical form of measles with a moderate rash for 2 days, a temperature of 102 for one day but no noticeable catarrhal symptoms. She was with difficulty put to bed for the day. One day later a boy of 7 developed a milder rash, but would not remain in bed. The next day 2 more, aged 5 and 4 developed a very transient rash for one day with no elevation of temperature or other symptoms. The youngest, 2 years, showed no symptoms at all. These children were all given 5 cc. of serum, but the protection afforded increased as the age decreased, i. e., from a mild attack of measles in the oldest through very transient atypical forms for the younger ones to complete protection for the youngest child of two years.

Degwitz[6] has used a 2.5 cc. dose of serum as a unit, increasing this amount with the age of the patient and length of exposure. Zingher has also varied the size of the dose with these two factors.

We have had no experience with the use of whole blood or serum obtained from persons who have had measles at rather remote times. Reports by several observers seem to indicate that such blood from adults who had measles in childhood possesses distinct protective power, but must be given in relatively large doses (30 to 40 cc. of whole blood). The blood may be injected intramuscularly without or with the addition of sodium citrate to prevent clotting. When convalescents of sufficient age are not available, the blood from parents and older children who have had measles may be used to secure protection or at least to cause a modification in the severity of the attacks if they occur.

Our experience has been that most people are willing to give blood without financial remuneration. When the humanitarian side has been pointed out, we have had very few refusals to donate blood either for measles or scarlet fever. We have been getting blood from convalescent scarlet fever patients for several years.

From the reports of various investigators, it is fairly well established that serum or whole blood from persons recovering from measles contains sufficient antibodies to protect against measles when given early. It is a safe procedure when donors are selected carefully. The main defect of the plan is the lack of available donors. This has been met by Adler[4] in his private practice by using the blood of relatives. In New York City the Health Department has made serum available for the general practitioner. With closer cooperation between the family physician and a hospital group, there could soon be collected enough serum for considerable prophylactic work against measles in children under 5 years of age.

SUMMARY

1. In a previous report 57 children exposed to measles were observed; 9 were not given serum and all developed typical measles; 48 were given serum and 44 were entirely protected. Of the 4 developing measles, 3 were given the serum injection too late—8 to 12 days after exposure—and the course of the disease was apparently unaltered. One child given serum on the day of exposure developed typical measles 15 days later. There was one failure to protect in 45 cases given serum within 4-5 days of exposure.

2. In the present series, 100 susceptible children were given a 5 cc. dose of convalescent measles serum. Eighty-one were entirely protected, 9 developed atypical measles and 10 developed the disease in a typical form. Of the 10 developing unmodified measles, only 3 were given the serum within 5 days of exposure.

3. From various reports the protective power of whole blood from persons who have had measles sometime previously seems fairly well established. Where convalescent serum is unavailable, this method may be used by the general practitioner to good advantage.

BIBLIOGRAPHY

1. Weaver, G. H., and Crooks, T. T.: Jour. A. M. A., 72:204 (Jan. 19), 1924.
2. Zingher, A.: Jour. A. M. A., 82:1180 (April 12), 1924.
3. Davis, R. C.: Med. Clinics of N. America, 7:1259 (Jan.), 1924.
4. Adler, S. W.: Minnesota Med., 600 (Sept.), 1924.
5. Cambessedes, H., and Joannon, P.: Medicine, 5:209 (Dec. 23), 1923.
6. Quoted from Zingher, A.[3]

THE ENIGMA OF APPENDICITIS*

R. E. LEE GUNNING, M.D.
GALESBURG, ILL.

An analysis of our surgical experience with over 600 cases of appendicitis has led to the conclusive title and presentation of this paper. Having a personal avidity for figures and statistics no such analysis has been attempted, but rather a general resume of the presenting signs and symptoms of acute appendicitis, as we have seen them, is offered.

The pathological typing of acute appendicitis into acute catarrhal and acute suppurative has not, in our experience, been of easy demonstration. It is our practice, and by our continued teaching, the practice of the physicians referring surgical cases to us, to insist on surgery as soon as the diagnosis of appendicitis is made. In spite of this practice, rarely have we seen an appendiceal specimen that we could consider as the seat of catarrhal inflammation only. It is our belief that the catarrhal stage so rapidly advances that within a few hours definite suppurative changes are present. We believe that very frequently the suppurative stage is present almost from the onset.

Most text-books, under the diagnosis of acute appendicitis, set forth the signs and symptoms in chronological order. Much effort has been expended in papers attempting to clarify the diagnostic problems of the condition and give an outline of the presenting symptoms and bedside findings, typical and characteristic of acute appendiceal inflammation. We do not believe that there is such an appendiceal syndrome. The great majority of our cases could not be classified in terms of such a syndrome. An early diagnosis in acute appendicitis is often a most difficult diagnosis to make, frequently being made by exclusion only. An early diagnosis is necessary if we are to further lower our surgical mortality and diminish the morbidity subsequent to abscess formation, generalized peritonitis and post-operative adhesions.

We choose to present our observation in terms of the so-called signs and symptoms of the acute case, namely—pain, nausea and vomiting, leucocytosis, fever and diarrhea or constipation.

Pain, in our experience, has been the most constant symptom. Early, as is well known, it is usually located in one of three places, namely—the epigastrium, about the umbilicus, or in the right lower quadrant of the abdomen. It may be generalized throughout the abdomen. It may be localized anywhere in the torso, from the clavicles to Poupart's ligaments, anterior or posterior. Occasionally, with typical gall bladder localization, operation proved the presence of a pus appendix only. In a few cases there has been no localization, pain or tenderness. Recently, while operating for a retroversion an appendix was removed for prophylaxis. The pathologist reported acute suppuration within the lumen. This patient had no symptoms preoperative and to her knowledge had never experienced an attack of appendicitis.

Tenderness can be elicited in practically all cases, if sought for. The best method for obtaining this is by deep palpation—recto-abdominal or vagino-abdominal, preferably in a warm bath. The bath will overcome most of the voluntary rigidity when present. The localization of the tenderness is in the lower right quadrant of the abdomen.

Nausea occurs frequently, vomiting less frequently, in our experience. We believe this to be a late symptom because of our repeated removal of suppurative appendices from patients who had not presented this combination. Also, these symptoms are so frequently associated with many other conditions within and without the abdomen and with or without pain as, in our experience, to be of little value in the history of a patient who presents a possible acute appendix. We have, however, seen cases in which it was the only presenting symptom.

Leucocytosis, with polynucleosis, in an early case, is of negative value when the total count is over 20,000. The majority of our cases have not had over 15,000 and often even with gangrene, rupture and beginning peritonitis, the count has been below 12,000. Many acute early cases show a normal total and differential count. On the other hand, a routine blood on patients having no acute condition, will often show a persistent count of from 12,000 to 15,000. In suspected cases of appendicitis, in our experience, an early blood count fails to confirm or deny a diagnosis.

In an early case, temperature measurements have also been of negative value. The referring physician, who has waited for an elevation of

*Read before the Section on Surgery of the Illinois State Medical Society, Springfield, May 7, 1924.

temperature to confirm his suspicions of appendicitis, almost invariably brings in a case complicated by a beginning, or well developed involvement of the peritoneum. An elevated temperature bears us to a diagnosis of a late case and we usually find surgical drainage necessary. Frequently we have seen a normal or subnormal temperature in a ruptured case, with an overwhelming infection, but we may be sure that a marked elevation of temperature has previously been present.

The condition of a patient's intestinal motility has never been of value to us in summing up a diagnosis, except for the occasional history of a loose movement shortly following the onset of the pain. Only rarely is intestinal activity normal in any form of illness. The laity well appreciate this and an acutely ill patient is soon dosed with a laxative, thus masking this part of the history.

Much has been written regarding the erroneous diagnosis of acute gastritis, gastralgia, bilious attack, etc., when in our opinion, frequently the true condition is acute appendicitis. Most frequently this may clear up until a subsequent attack, but occasionally, yet all too frequently, the end result is a ruptured appendix. The latter condition has been frequently seen with the pre-onset history of the supposed ingestion of some indigestible food. Any indefinite gastro-intestinal disturbance, in our opinion, must be considered appendiceal in origin, until proven otherwise. If early, it cannot be so proven, appendectomy is indicated. It is better surgical judgment to remove a number of appendices unnecessarily than to wait too long for a diagnosis on one.

In summing up, we believe that:

1. An early diagnosis in acute appendicitis is often most difficult and truly presents an enigma.

2. Suppurative pathology is present very early and often from near the onset.

3. Most of the signs and symptoms usually taught as characteristic are either misleading or present only after the early stage is passed.

4. The most constant and characteristic sign present early is deep tenderness demonstrated bimanually.

5. In every case of acute abdominal pain or apparent acute indigestion, the appendix should be either ruled out or cut out.

COMPLICATIONS OF MASTOIDITIS OPERATION*

CHARLES MOORE ROBERTSON, M.D.
CHICAGO

The usual procedure in considering complications attending or following mastoid operations is to relate the complications arising within the cranial cavity or from jugular thrombosis.

I am going to depart from that course this morning and talk to you of the ordinary complications you meet in the treatment following mastoid surgery and consider details which I know have tortured you in the progress of such cases. The first complication I would speak of is pain. At the time of operation the surgeon often places his dressings too tight. After the patient is returned to his bed and the wound has begun to bleed, as it does after operation, the patient experiences quite a lot of pain. This is usually caused by the dressings having been placed too tightly. Vertigo is often present at the same time. These complications are unpleasant and can be relieved by taking care of the pressure made by the dressings. Lack of granulations with no effort on the part of the wound to heal requires a full examination of the patient to make out systemic diseases, which if found, require special care. We may speak of a displaced facial nerve within its canal, or, as the author saw in two cases in which the nerve lay exposed in the cells of the mastoid. One case just recently operated upon had a facial canal which was situated in the pneumatic cells and could easily have been severed in the canal, had it not been recognized. This condition is not so rare as we have been led to believe.

The author has seen three such cases. In some cases we have a displaced jugular bulb as is seen by a bluish swelling on the floor of the middle ear. This should be treated with respect and not chiseled into for fear of sinus infection or puncture. Anomalous position of the lateral sinus especially in sclerotic mastoids should be mentioned as a complication, for this often prohibits operators from removing all diseased cells which is so necessary if we would obtain a cure. Caries about the internal carotid is a complication which must not be forgotten.

The author had a spontaneous rupture of the internal carotid while the eustachian tube was

*Read before the Section on Eye, Ear, Nose and Throat of the Illinois State Medical Society, May 6, 1924.

being curetted. This occurrence is not so grave an accident as might be supposed, as a slight pressure gauge pack will control hemorrhage at this point there being no pulsation in the bony canal of the internal carotid artery.

One condition I would call your attention to is the necrosis of the partition wall between the eustachian tube and the canal of the tensor-tympani muscle. This, if not removed, will keep a discharge going for months and years.

Overhanging of the external convolution of the temporosphenoidal lobe is not uncommon and cells in the atrium are liable to be missed, thus delaying or preventing healing. Formation of bridges of tissue in the new cavity must be controlled. Exuberant granulations must be kept from piling up in and around the oval window. Discharge is kept up by prolonged packing of the wound.

Of the more serious complications of suppurative otitis media, labyrinthitis may be mentioned as occurring much more frequently than has been supposed. Inflammations of this character may be termed as serious or purulent. Serous labyrinthitis is usually localized and walls itself off by an exudation barrier so that operation on this type of labyrinthitis is unnecessary. The purulent type, however, requires draining when present or the patient will proceed to the more grave condition of purulent meningitis and death. If the labyrinth requires draining, the operator should have an intimate knowledge of the minute anatomy of the middle ear as otherwise the life of the patient, or the function of the facial nerve would be lost.

Purulent labyrinthitis is a condition in which you have pus in the labyrinth which if continued will end in purulent meningitis and death. The question comes whether it should be opened and drained or should we await the outcome of the suppurative process.

Of all the complications of course extra-dural abscess about the sinus is more common than any other place. Next to this is extra-dural pus under the cerebrum and next to that under the cerebellum. Here the sinus should be exposed well below the point of the lower elbow to find if the jugular bulb is involved or not. These cases, when drained, go on just the same as the ordinary mastoid. Cerebral extradural abscess usually occurs above the attic or above the antrum. This is of quite common occurrence. They are usually evacuated early, but should they not evacuate, the case usually goes on to meningitis. In the case of cerebellar abscess, we usually find it above the sinus, though it is necessary to look below or behind the sinus to see if there is any accumulation there. Nearly all of these cases of the latter type have pain away back of the ear.

Sinus thrombosis is the next frequent complication. It may be sterile or purulent. Sterile either from pressure outside of the sinus, or from a perisinus abscess producing direct pressure on the sinus thereby producing a clot. The sinus thrombosis may develop into a phlebitis of the wall of the vessel in which there is little or no clot. Then we may have the complicating clot of the internal jugular of the neck or in the lateral sinus of the upper portion or we may have a sinus thrombosis of the cavernous sinus with all the findings we get in cases of that sort.

We may have as a complication a brain abscess, either a cerebellar or a cerebral. The cerebral is the more common. It is usually situated along the proximity of the necrosis. In some cases it is found removed quite a distance from the original focus. It is usually singular, but may be multiple. In cerebellar abscess it is usually well behind the sinus, sometimes very small and sometimes quite extensive.

Lastly, we have meningitis which may come from a sinus thrombosis and abscess or from a perisinus abscess, an extradural abscess or from purulent inflammation in a dural abscess, but more often from purulent meningitis.

DISCUSSION

DR. A. H. ANDREWS, Chicago: There is one phase of the subject I want to discuss, this is the facial nerve. I want to warn those who would become mastoid operators not to experiment on the patients. A man who wishes to perfect himself in this operation should do his experimenting on the cadaver. In operating on the cadaver we can go as close to the danger areas as we think safe and then check up our operation by going on and see how close we were. By operating on the cadaver we can acquire ability which will enable us to operate safely and thoroughly on patients.

The Doctor mentioned the facial canal and the cells which surround it. My impression is that the facial nerve is injured in its downward progress back of the auditory canal oftener than in any other place. This is because of the variation in the tissue which surrounds the nerve. Sometimes it is in hard bone. Sometimes the cancellous portion of the mastoid en-

tirely surrounds the delicate canal in which the facial nerve lies. In doing cadaver work I have frequently found instances in which had I undertaken to remove all the mastoid cells I would have injured the nerve, if I had not kept in mind this variation. By so doing and using a delicate instrument we are usually able to remove all necessary diseased tissue without injury to the nerve. In many cases the deeper cells back of the nerve extend a third to a half inch deeper than the level of the nerve itself. It is not always easy to avoid injury.

DR. JOSEPH C. BECK, Chicago: The chairman called attention to the number of facial nerve paralyses that continue even after the paralyzed nerve is hitched to a functioning nerve. The point is that you cannot hitch on the facial nerve and expect results if the muscles are past recovery. The rule is that as long as you get a reaction to degeneration, that is the reaction test of galvanism with 5 ma. electricity, a vermicular contraction along the whole side of the face will be caused, but do not mistake that for a reaction of the masseter muscles. They are supplied, not by the seventh, but by the fifth. I have had 17 cases in my experience of facial nerve paralysis repaired by plastic operation. The earliest recovery was after three months. I did an implantation anastomosis in this case. The usual operation is to use a branch of the hypoglossal, that is the descendens hypoglossus, which is a very good size. This nerve comes off from the hypoglossal proper opposite the middle tendonous portion of the omohyoid and runs directly downwards supplying part of the posterior belly of this muscle. It is cut as near the insertion of the muscle as possible and is implanted into the distal portion of the spinal accessory. The proximal portion of the spinal accessory is united with the previously prepared peripheral portion of the facial nerve. These anastomosed portions of nerves are surrounded with particles of muscle tissue snipped off from the sternocleido mastoid to prevent the interposition of scar tissue. The suture material as well as the needles are of necessity the very finest that can be obtained. When this operation as described is successful, the disagreeable associated action of the face with the movements of the shoulder is done away with. Dr. Grant of Denver, who first described this method, is entitled to a great deal of credit.

In order to avoid an associated action as when we used the spinal accessory, we now take the descendens hypoglossus and attach it into the other side of the hypoglossal so as to have continuous function. The result of the 17 cases were 14 good acting nerves. The other cases were all late. I should not have operated on them at all, but you know if a case comes in to you, you operate. Dr. Barney of Indiana, who discussed my paper before the New York Academy of Medicine, said the bone should be left alone around the facial canal, even though it was necrotic. I was opposed to that. Many years ago he operated on a case and produced a paralysis and he claimed that in order to remove all the disease he had cut the facial nerve.

DR. CHARLES M. ROBERTSON, Chicago (closing the discussion): I thank my confreres for their remarks. If the facial nerve is injured it is a very good idea to hitch it on to the hypoglossal or the spinal accessory. The hypoglossal is probably the nerve of choice for this operation. In nearly all the text-books I have seen, the hypoglossal is hitched on in the wrong way. If you have a stump of the facial nerve as it comes out of the styloid foramen, you can get enough to bring this down and hitch it onto the hypoglossal, you will thus have the nerve current coming down into the facial. In all your nerve anastomoses you have to have a switch just like you have a railroad switch. So the nerve impulse travels toward the periphera of the nerve.

In cases of nerve palsy from nerve trauma associated with concussion, the nerve will begin to recuperate after say from three weeks to six months. The facial nerve is the most easily injured of any nerve in the body, except the eighth or auditory nerve. The facial nerve has not much tendency to come back, though it is possible to cut off the ends of some nerves and place them in a cylinder of decalcified bone. They will grow again and function. The facial nerve takes a long time to regenerate. If any motion is seen in three or four months you can be sure that the facial nerve is regaining its function. Dr. Beck has done quite a little facial nerve work and he will probably talk to you about it.

The person who is going to be an operator should first operate on the cadaver. No one, and I do not care who he is, can learn the mastoid in the dry specimen. He has got to see it in the dead house just as Dr. Andrews has said. The operation is performed and after the operation is completed, you see how far you were from danger. Better than any cadaver work is to teach students to do the work. You learn more than they do. One thing that is essential is to learn the anatomy of this little bone.

VENEREAL DISEASE PROBLEM*

CHARLES MORGAN MCKENNA, M.D.
From the Department of Urology, University of Illinois College of Medicine.
CHICAGO

Acute venereal disease is a problem that has confronted the medical fraternity for centuries without any apparent satisfaction or definite solution. Cabot says, "sexual education is in its infancy." Many plans have been tried by both church and state without any definite apparent result. It is the opinion of the writer that acute gonorrheal urethritis results in more complications, causes more unhappiness than any other disease known to medical science. Morrow estimates that 60 per cent. and Forcheimer that 51 per cent. of the adult male population of the United States have gonorrhea. He also adds that

*Read before the North Side Branch, Chicago Medical Society, 1924.

20 per cent. of these young men become infected before they are twenty-one years of age and over 60 per cent. before they pass their thirty-eighth year. Then Blanchkl calculates that among the clerks and business men in Berlin between the ages of 18 and 21, 45 per cent. have had syphilis and 120 per cent. have had gonorrhea. In Breslau 77 per cent. have had syphilis and 200 per cent. have had gonorrhea. Stokes, the Epidemiologist of the Mayo Clinic at Rochester, Minn., in his book, "The Third Great Plague," on page 26 states: "It is not infrequently estimated that as high as 70 per cent. of adult males have gonorrhea at least once in a lifetime. On the whole it is conservative to estimate that one man in ten has syphilis." Col. Veeder of the United States Army, Washington, D. C., in his book entitled, "Syphilis and Public Health," on page 46 states: "Fully one-eighth of all human disease and suffering comes from this source; that 60 per cent. of young men become infected with venereal diseases: 20 per cent. before the twenty-second year; 50 per cent. before the twenty-fifth year and 80 per cent. before the thirtieth year." Rosenow, Professor of Preventive Medicine and Hygiene at Harvard, and formerly Director of the Hygienic Laboratories of the United States Public Health Service, in his book, "Preventive Medicine and Hygiene," on page 62, quotes Morrow as stating that "Seventy-five per cent. of adult males acquire gonorrhea at some time, and from five to ten per cent. acquire syphilis." Norris of the University of Pennsylvania in his book, "Gonorrhea in Women," on page 126 quotes as follows: Ninety per cent. of all pelvic infections are of gonorrheal origin; 30 to 50 per cent. of all childless marriages are directly caused by gonorrhea; 80 per cent. of the men in large cities have had gonorrhea once or several times, 45 per cent. infecting their wives; 80 per cent. of all operations upon women for diseases of the uterus are caused by gonorrhea; that venereal diseases contribute a sum total of morbidity of nearly double that of all infectious diseases, both acute and chronic; that there are one million five hundred thousand infected annually with gonorrhea in this country.

Funk, Director, Bureau of Social Diseases, Pennsylvania State Department of Health, in his book, "Vice and Health," on page 47 states: "Ninety per cent. of all syphilitic infections in men are contracted from prostitutes, either professionals or amateurs; 50 per cent. of all syphilitic women are infected innocently; 70 per cent. of the New York hospital for venereal disease patients were respectable married women infected by their husbands; 85 per cent. of married women who have syphilis have contracted it from their husbands; 51 to 60 per cent, of the male population in the United States have or have had gonorrhea."

The twenty-eighth annual report of the State Board of Health of Wisconsin—the last report issued—on page 146 states: "We must look upon syphilis as a misfortune and not as a badge of immorality. The children, wives and those with accidental infection are many. This group makes up approximately 50 per cent. of syphilitics."

Rankin, former President of the American Public Health Association, and for years Secretary of the South Carolina State Board of Health, in the *Journal A. M. A.* of January 22, 1922, on page 281 says: "Syphilis causes one-tenth of all deaths; produces twenty per cent. of the inmates of our institutions for the insane (whose total population approximates the population of our universities). Gonorrhea is chief cause of sterility and produces an enormous drag on efficiency and industry." When one considers that 80 to 90 per cent. of all acute infections of the anterior urethra become posterior and that 50 per cent. of the posterior affects the adnexa and in turn other complications arise it seems that we are dealing with a most virulent infection.

There must be some good reason for such an appalling condition and with this in mind we tried to find some data for further thought and investigation. A great many suggestions have been made to solve this problem. The question of education has suggested itself and the time devoted to it which I will attempt to show. In all A Class medical colleges of the United States 4,000 hours or thereabouts are required for graduation with a degree of M.D.; in some medical colleges a little more and in some a little less. We have written a number of the class A universities regarding the course in genito-urinary diseases. While mostly all of them devote a certain amount of time to urology in other departments, the following is a list of the colleges with the amount of time devoted to diseases of the genito-urinary tract as a specialty.

	Hours
Vanderbilt University Medical College	224
Meharry Medical College	192
Ohio State University Medical College	108
Medical College of Virginia	104
University of Colorado Medical College	98
Northwestern University Medical School	96
University of Oregon Medical School	96
Baylor University Medical School	92
Long Island College Hospital	114
Loyola University Medical School	84
Jefferson Medical College	80
University of Georgia	104
Emory University Medical School	76
University of Illinois	72
Detroit College of Medicine	72
University of Tennessee Medical School	66
Bellevue University Medical School	64
University of Michigan Medical School	62
University of Pittsburg Medical School	56
University of Buffalo Medical School	53½
Tulane University of Louisiana	52
Syracuse University Medical School	52
Boston University School of Medicine	50
Rush Medical College	48
Georgetown University Medical School	45
Harvard Medical School	40
University of Minnesota Medical School	36
St. Louis University Medical School	36
Marquette University Medical School	36
University of Cincinnati Medical School	32
Western Reserve Medical College	32
Jorns Hopkins Medical College	24

The number of hours given in the above list includes both didactic and dispensary work. It will be recognized there is a considerable difference of time given over to this subject in the different colleges.

It must not be forgotten that the time devoted to the subject of venereal diseases in the medical college is the only training the medical student receives until he or she enters the practice of medicine. It will also be remembered that the treatment of acute venereal disease is not carried out in the general hospitals, so the student must depend solely on the instruction that he receives in this special work in our various medical schools. In a great metropolis like Chicago we have only two hospitals willing to receive patients with acute venereal disease, which I believe is very limited when one considers a population of almost 3,000,000 people. It might be well to mention that one of these hospitals is the great Cook County Hospital and urology in that hospital is under the direction of the Dermatological Department. The number of beds for the entire department is somewhere in the neighborhood of 40.

A prominent urologist once said that he did venereal disease work in order that he might be able to do genito-urinary surgery and when the roll is called of urologists one finds that less than 10 per cent. of his work is devoted to acute gonorrheal cases. That means that the other 90 per cent. is treated by the general man and at the corner drug store.

Pathology

How many physicians have ever studied the pathology in connection with anterior urethritis due to the Neisser organism? If my recollection serves me right there was very little if any work in this department. Our knowledge of the pathology dates back to the work of Finger, Grohm, Schlaenhaufer, who inoculated criminals condemned to death and then found by immedi-
coccus. The following are some of their findings:
coccus." The following are some of their findings:

Thirty-eight hours after inoculation the gonococcus had only just begun to affect an entrance between the epithelial cells and the lacunae of Morgagni were crowded with the gonococcus. Diapedesis had begun and the intracellular gonococci were found among a few leucocytes on the surface of the epithelium. At the end of three days the inflammatory process was well under way. The surface of the mucous membrane was covered with pus and the epithelium infiltrated by bacteria from one side and by leucocytes from the other. The investigation showed four striking characteristics:

First, the pavement epithelium of the fossa navicularis although swollen with leucocytes resisted the invasion of the gonococcus almost absolutely.

Second, the cylindrical epithelium of the penile urethra was chiefly invaded.

Third, this invasion was most marked about the crypts and the glands were packed with pus but no gonococci were present.

Fourth, the subepithelial connective tissue though showing every evidence of inflammation did not show gonococci except in the neighborhood of the crypts and glands.

It has been estimated that in acute gonorrheal urethritis the organism invades the urethra at the rate of about 1 cm. in 24 hours and it is, therefore, very easy to calculate the number of days before the junction of the anterior and posterior urethra is reached. Inasmuch as all acute gonorrheal infections are anterior, one can readily see how the posterior urethra becomes infected. This is usually accomplished under one of two conditions, either by a lowered vitality on the part of the patient or by treatment, forced injections or instrumentation.

Symptomatology. Inasmuch as the symptomatology is well-known, such as burning on urination, frequency of urination, creamy discharge, red meatus and painful priapism—the mere mention will suffice.

Treatment. It is not the purpose of this paper to standardize a treatment for acute gonorrhea.

but it is the intention of the writer to impress on every physician who undertakes to treat this class of cases, to give some form of local treatment according to pathology whether it be hyperacute, acute, subacute or chronic. It has been brought out very well by various health officers and dispensary workers that many patients seek advice because their family physician refused to do anything more than prescribe internal medicine and give advice, all of which tends to prolong the disease and produce further complications. It is for this reason that I have outlined a general course to follow.

A mild silver salt such as half per cent. of protargol or 10 to 20 per cent of argyrol. The prophylaxis question was well brought out during the great war and by virtue of the education given to the soldiers prophylaxis today is in very common usage among the lay people.

It seems to me that we are able to give more adequate treatment and obtain better results when we are dealing with a patient who realizes his condition. The only way I know to have the patient do this is by education on the part of the physician. And this is to be done on the patient's first visit. He should be made to understand that the disease requires immediate attention and that he must cooperate with the physician. The earlier one has the confidence of the patient the sooner will be his cure. While it is important to impress on the patient the seriousness of his illness it must be done in such a way as not to frighten him. The question of diet, catharsis and as much rest as possible should be fully explained. The internal medical treatment should be carried out from the beginning with the local treatment. Before one can consider the local treatment it is well to have a well equipped office with the proper armatarium. It is not enough to write a prescription and give advice and observe the condition of the meatus without giving some local treatment. We believe that the best local treatment is the early injection of from 10 to 20 per cent. of argyrol or one-half of one per cent. protargol or any of the mild silver salt solutions. It is also quite necessary that the patient be instructed as to how to inject himself. Also applications of heat to the anterior urethra. The time element should be explained. If possible, the patient should call and receive a treatment every day for the first seven or eight days and then two or three times a week afterwards. Much time could be saved for both the patient and physician. The treatment just mentioned refers to the anterior infections only. There has been some question as to the treatment of acute posterior urethritis. Inasmuch as the gonococci have been enfeebled or weakened by the time the posterior urethra is reached they yield to treatment much more readily than they do in the anterior urethra. Giving hot sitz baths, ten to fifteen minutes at a time, and some internal medication, hexamethylene, 40 or 50 grains a day, or some of the sandalwood oils according to the indications and deep injections by means of the Guyon catheter usually brings forth good results. The other method is what is known as the Janet treatment or more commonly known in this country as the Valentine treatment, which consists of filling the bladder by means of an irrigator from the meatus or the introduction of a catheter to the cut off muscle and then forcing the solution into the bladder or introducing a catheter into the bladder and filling the bladder with a hot potassium permanganate solution and then having the patient empty the bladder.

When should a patient be discharged?

Before a patient is discharged as being cured after suffering an acute neisserian infection it is not enough to make a smear and a microscopic examination as many times the gonococci organism is overlooked.

In all cases even though the urine may be clear the judicial use of a sound should be done and the entire anterior urethra massaged on the sound while it is in place. By so doing any infected glands of Littre or lacune of Morgagni will be broken down and the pus drained into the urethra. This procedure should be carried out at least twice or three times before a culture is made. It is our practice before discharging a patient and I believe it is only fair to the patient to do a culture and a compliment fixation test. I think it is the only true way to tell whether there is any existing infection. Even though the urine may be absolutely clear and free from shreds it would be doing the patient a gross wrong to discharge him as cured while a growth could be found on culture if done. The technic of this is very simple. Cleanse the glans penis well with plain soap and water, follow up with weak alcohol solution and have the patient urinate into a large sterile test tube. Second,—massage the prostate gland and vesicles and collect the contents into a second sterile tube and have

the same cultured in separate dishes. While this requires some time it will save both the patient and the physician a great deal of anxiety.

The daily use of a microscope in all acute and chronic infections is one of the most essential factors of determining the end result.

CONCLUSION

First, inasmuch as one-eighth of all human diseases are due to some form of complication of gonorrhea and syphilis more time should be given to this subject in our medical schools.

Second, all general hospitals should understand the great necessity of wards for handling acute venereal diseases.

Third, in large cities there should be a hospital devoted to the medical and surgical treatment of genito-urinary diseases.

Fourth, a urological department dealing with medical research and the surgical aspects of genito-urinary disease should be installed in all medical colleges.

Fifth, local treatment should be instituted in every acute gonorrheal case. A well equipped office should be emphasized and education of the patient to his own condition should be followed out in each case.

REFERENCES:

Cabot's: "Modern Urology."
Morrow, and Blanchkl.
Stokes: "The Third Great Plague," page 26.
Col. Veeder: "Syphilis & Public Health," page 46.
Rosenow: "Preventive Medicine & Hygiene," page 62.
Norris: "Gonorrhea in Women," page 47.
Funk: "Vice and Health," page 47.
State Board of Health Bul. of Wis., 28th annual report.
Rankin: American Medical Ass. Jour., of Jan. 22, 1922, page 281.
Keyes.

ECTOPIA LENTIS (REPORT OF THREE CASES)

M. L. Folk, M. D.
Associate Attending Surgeon in Ophthalmology, Michael Reese Dispensary.
CHICAGO

As congenital dislocation of the lens is a rather rare condition the following cases may be of interest.

Case 1. Mrs. E. N., aged 47 years, married, housewife, born in Russia, came to our clinic at the Michael Reese Dispensary, August 16, 1923, complaining of poor vision and headaches. This condition existed since birth. Her family history was negative with the exception that her mother suffered from similar trouble. Her personal history was also negative. She never sustained any injury to the eyes. Examination of the eyes disclosed conjunctiva and cornea normal. Anterior chamber deeper in lower half than upper. Upper part of the pupil was of a gray color while lower was black. Examination with ophthalmoscope showed both pupils to be crossed by semi-circular dark lines symmetrically placed. Tension was normal. V. O. D. = 6/200; V. O. S. = 6/65 — 2.

Diagnosis. Congenital dislocation of the lenses. Probably congenital in type, in view of the fact that the condition existed since birth, that it was symmetrical and that her mother was similarly affected.

Case 2. Mrs. B. B., aged 36 years, housewife, Russian, came to Michael Reese Dispensary, May 15, 1922, complaining of near-sightedness and occasional headaches. Family history was negative, except that mother was near-sighted all her life. No history of injury to eyes could be obtained and she stated that her condition had existed as long as she could remember. Examination disclosed dislocation of both lenses, floaters in the vitreous and tremulous iris. She was given glasses but her sight did not improve. Seven months ago an operation was performed on her left eye. This improved her distant vision, but there was no change in the near vision. She returned to our Clinic, Aug. 2, 1923, complaining of same symptoms. Lens in left eye had been removed but fundus showed choroiditis juxta-papillaris. Right eye showed no change. V. O. D. = 5/200 with + 3.50 = 10/200. V. O. S. = 2/100 with — 2.50 + 5.00 × 15 — 20/50 + 1.

Case 3. E. K., aged 7 years, came to the clinic of Dr. O. Wipper (with whom I was formerly associated at the Chicago Policlinic) Nov. 7, 1923, complaining of having had poor vision since birth. Glasses did not improve his vision to any great extent. Examination disclosed dislocation of both lenses and beginning cataract in each eye. In the right eye the suspensory ligament was seen lying over the edge of the lens as a dark segmented crescent, snake-like in appearance. High myopia was present. V. O. D. = 20/100; V. O. S. = 20/100.

Discussion. Congenital dislocation of the lens is a very rare condition. Knapp saw only ten cases in 50,000 patients. Zani in 1909 stated that not more than 136 to 140 had been observed.

Etiology. Heredity plays a great part. Martin recorded its occurrence in five successive generations comprising ten individuals. Adams re-

ports a case of a family of nine children, seven of whom had dislocated lenses. Lewis found 16 cases in six generations of one family. As to pedigree,—out of marriages of 22 affected and non affected parents seventeen were affected, proving a ratio of almost three to one. From this we may conclude that the normal is recessive to the abnormal; that individuals exhibiting an abnormal condition of the lens possess a certain factor in the presence of which the development of the suspensory ligament is inhibited.

Other causative factors are rupture of the suspensory ligaments in utero, developmental defects, and retraction of the vitreous. Zani believes the theory by Badal and LaGrange to be the best. According to this theory all such eyes are myopic and the lens is too small in size for space it should occupy. As a result the over-stretched zonula yields and the lens is displaced into the direction of least resistance.

Symptoms. (a) Subjective: Poor vision is the main symptom. Occasionally monocular diplopia or polyopia is present.

(b) Objective symptoms: These are best demonstrated under dilitation of the pupils. With a small pupil the iris will hide the lens. The anterior chamber is deeper on the aphakic side than in the non-aphakic side. Iridodonesis is present on movements of the head. Nystagmus is occasionally present. On examining the eye with the ophthalmoscope, we see one or two dark heavy crescentic lines crossing the pupil. The lens appears gray while the aphakic part appears black. The border may be notched, indicating coloboma. Frequently the lens is small in size and round in shape, resembling fetal lens. The condition is generally bilateral and symmetrical. The displacement is usually upward and inward, —it may, however, be down and in, straight outwards and down and out, the frequency being in the order named. Directly downward almost never occurs. Backwards it may occur in microophthalmos as a result of a defect in the development of the vitreous.

Associate Pathology. This may include ectopia of the pupil, errors of refraction, particularly astigmatism, fundus changes, coloboma of iris, choroid or ciliary body, aniridia and nystagmus. The patients are generally intelligent and well developed, however, in the case of Adams referred to above, the two unaffected children were more intelligent than the others.

Prognosis. Doubtful. Usually there is no change of condition. The capsule of the lens is seldom ruptured and the latter remains transparent. Spontaneous dislocation, cataract and glaucoma may occur.

Treatment. There is very little that can be done for these cases. If glasses improve vision they should be prescribed. If the lens becomes opaque, or if the diplopia is annoying, removal of lens should be attempted. This, however, is very difficult. In early life discission is to be preferred.

2256 W. Division St.

TRYPARSAMIDE NOW AVAILABLE

The Rockefeller Institute for Medical Research takes pleasure in informing you that arrangements have been made for the release of Tryparsamide, effective January 1, 1925.

The drug is to be manufactured by the Power-Weightman-Rosengarten Co. of Philadelphia, and will be distributed through the regular trade channels. Orders for future delivery may be placed with drug firms or forwarded to the manufacturers, in which case delivery may be made, at the discretion of the manufacturers, through their nearest representative. The scale of prices, which has been arranged in conference with representatives of the Rockefeller Institute, should be the same in either case. As the drug is being released for the benefit of the public and the Rockefeller Institute does not share in any way in the profits, the prices are being made, with the cordial cooperation of the manufacturers, as low as at present possible.

HERMAPHRODITISMUS IN THE HUMAN BEING

Schauerte, in the *Zeistchrift fuer Konstitution*, describes a sixteen-year-old twin girl who had a fair-sized penis that showed erectile power at the age of ten, a scrotum on one side but also a vulva into which opened the urinary passage. She had many boyish traits during childhood. The breasts enlarged at fourteen years and menstruation began at fifteen years and six months and remained regular. Laparotomy revealed a normal uterus, one enlarged ovary containing a blood cyst and a normal uterine tube. Section of the scrotal contents proved them to contain a true testis with spermatogenesis going on as far as spermatids. Between the tubules was an abundance of interstitial cells. By the side of each testis was a functioning ovary with ovarian follicles, ova and corpora lutea. Section of the amputated penis showed well-developed corpora cavernosa. After removal of the ovotestis, menstruation continued and the sex inclination of the patient reversed to the feminine side.

Society Proceedings

ADAMS COUNTY

The meeting was called to order at the Chamber of Commerce March 9, 1925, at 8:15 p. m., by President Dr. C. D. Center. Thirty-five members and three guests were present.

Under the head of committee reports, Dr. Pearce reported the progress of the Convention Committee and Dr. Wells asked that all those who had made a financial pledge for the convention to kindly pay these pledges as soon as possible. The president then called on Dr. H. M. Camp, Secretary of the Illinois State Medical Society, to address the meeting at this time. Dr. Camp reported the splendid progress that the State Society was making with its plans for the Convention to be held in Quincy in May. Under the head of correspondence, the Secretary announced, first, the receipt of a post card from Dr. W. E. Shastid of Pittsfield, now visiting in California, extending greetings to the Society; second, a letter from Dr. R. H. Jacobs, Jacksonville, announced his resignation from the Society; third, a letter from Mr. C. L. Wells, asking the appointment of a member of the society to serve on the Board of Directors of the Social Service League of Adams County; fourth, letter from Dr. Joseph B. DeLee, Chicago, expressing his interest in the case report of Dr. J. W. E. Bitter, published in the January *Bulletin;* fifth, a notice in the ILLINOIS MEDICAL JOURNAL asking the appointment of a representative from this Society to serve with the General Medical Committee of the National Baby Congress and Health Exhibition; sixth, several letters concerning a controversy going on in the Illinois Tuberculosis Association; seven, letter from Dr. Frank Cohen expressing his gratitude for the resolution in his behalf at the February meeting; eighth, a bulletin from the Legislative Committee of the Illinois State Medical Society; ninth, a letter from Dr. Baird of Galesburg, Illinois, with a petition to change the date of the 1925 meeting of the Illinois State Medical Society. This petition and letter had already been turned over to the Convention Committee by the Secretary. Dr. Nickerson made a motion that the Chair appoint a representative to serve on the Board of Directors of the Social Service League of Adams County. Seconded and carried. Dr. J. W. E. Bitter was appointed. Dr. Knox made a motion that the Chair appoint a representative to serve on the committee of the National Baby Congress and Health Exhibition. Seconded and carried. Dr. T. B. Knox was appointed. Dr. Williams presented his resignation from membership on the Gorgas Memorial Committee, stating that he did not care to serve because of the financial obligations that were expected from members of the committee. The Chair announced that because of the fact that members were expected to contribute financially to the Memorial, he would not appoint anyone, but if anyone wished to volunteer to accept the position he would be glad to appoint them. Dr. Bitter called the attention of the Society to the fact that a representative from the State Department of Public Health had been in Quincy recently in the interest of keeping the Venereal Clinic here. He made a motion that the Society go on record as opposing the establishment of free clinics of any kind in Quincy, and that a copy of same be sent to Dr. Rawlings, Director of the Illinois Department of Public Health. Seconded and carried. Dr. Irwin asked if the Society was still a member of the Chamber of Commerce, because the President of the Chamber had said that we were not. The Secretary stated that a voucher had been drawn for the current year's dues last November and believed it had been paid, and that he felt quite sure we were a member. Dr. Beirne suggested that the Secretary communicate with the Treasurer in regard to the matter in order to be sure that our dues had been paid. The President directed that this be done. The Board of Censors announced that they had not yet approved of the two applications that were up for consideration and Dr. Wells made a motion that they adjourn for a few minutes to make their report. Seconded and carried.

Dr. Camp then addressed the Society on the subject of "Shock—Its Diagnosis and Management." This paper was discussed by Drs. Becker, Williams, Baker, Miller, Nickerson, Shulian, Wolfe, Wells, Steiner, and finally Dr. Camp. A Symposium on Pneumonia was then given, individual papers being given by Drs. Litchfield, Cohen, Ericson, Irwin and Werner, covering the various aspects of the disease. These papers were discussed by Drs. Nickerson, Knox, Pollock, A. H. Bitter, Ericson, Becker, Montgomery, Swanberg and Williams. Dr. F. W. Bowles then read an interesting case report on a case of Pseudocyesis and Dr. Brenner reported three interesting cases that had occurred recently in his practice. These reports were discussed by Drs. Nickerson and Williams.

The Board of Censors brought in their report concerning the application of Dr. Hecox as being favorable, but asked for more time on the application of Dr. Snider. Dr. A. H. Bitter moved that the report be received. Seconded and carried. The President then appointed Drs. Pearce and Knox as tellers and Dr. Hecox was declared elected to membership to the Society. Dr. Nickerson made a motion that the Society extend a rising vote of thanks to Dr. Camp for coming to Quincy to address the Society. Seconded and carried.

Adjournment occurred about 11:00 p. m.

HAROLD SWANBERG, M. D.,
Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Meeting of March 4, 1925

1. Pharyngitis.....J. Holinger
   Discussion—Geo. W. Boot
2. Empyema.....Ralph Boerne Bettman
   Discussion—Isaac Abt
3. Traumatic Rupture of Thoracic Aorta with Review of 55 Abdominal Injuries
   Discussion—Wm. M. Harsha, Daniel A. Orth

Meeting under the Auspices of the Aux Plaines Branch,

March 11, 1925

Studies on Etiology and Specific Treatment of Arthritis, Ulcer of the Stomach and Certain Epidemic Diseases of the Nervous System. (Moving picture demonstration.)

E. C. Rosenow,
Mayo Foundation,
Rochester, Minn.

Discussion—Frederick Tice, Ellis K. Kerr, Thomas E. Roberts, Walter W. Hamburger, A. C. Ivy, Eugene F. Traut.

Joint Meeting Chicago Medical and Chicago Urological Societies, March 18, 1925

1. Male Sterility.....V. D. Lespinasse
2. Some Phases of Seminal Duct Infection.....W. T. Belfield
3. Surgical Interference in Medical Kidney Conditions .....Gustav Kolischer

General Discussion

March 25, 1925
Regular Meeting

DIAGNOSTIC CLINIC

1. Bladder Neck Obstructions.
   Cases of Bladder Tumor..Daniel N. Eisendrath
2. Radiographic Studies of the Infant Chest.....W. W. Wasson, Denver, Colo.
3. The Medical Treatment of Ulcer of the Stomach and Duodenum.....Milton M. Portis

April 1, 1925
Regular Meeting

Surgical Treatment of Major Chest Conditions
Don Deal and Hermon Cole
Springfield, Illinois

(a) The Subject of Chest Surgery from two viewpoints.

(1) Our new technique for operative conditions within the chest such as foreign bodies, tumors, and lobectomies.

(2) Operation upon the chest wall for conditions within the chest.—Don Deal.

(b) Therapeutic pneumothorax and mechanical devices for controlling lung excursions. Lantern slides showing the amount of completion obtained by the various methods.—Hermon Cole.

Discussion—Ethan Allen Gray, Hugh McKenna, Clarence Wheaton, P. S. Winner.

CRAWFORD COUNTY

The March meeting of the Crawford County Medical Society was held Thursday, March 12, in the library of the Robinson Hospital. The meeting was called to order at 2:00 p. m. by the president, Dr. S. A. Smith.

Two excellent papers were read at this meeting. One by Dr. H. N. Rafferty was a very instructive and interesting paper on "The Prostate in Health and Disease." The doctor emphasized the importance of preoperative care of the patient and the difference between cases for operation and the non-operatives. Every member complimented Dr. Rafferty on the excellent presentation of his subject.

Dr. A. G. Brooks read a timely paper on "The Return of Tonsils after Operation." After the paper was received for general discussion it was brought out that tonsils do recur frequently, which consists mostly of lymphatic and connective tissue.

At this time Dr. C. E. Price, the county health officer, reported that he had been notified that Dr. J. A. Ikemire's laboratory at Palestine has been made a branch laboratory of the state department of health. Thirteen members present.

GREENE COUNTY

The Greene County Medical Society met in regular session in Carrollton on Friday, March 13, 1925. The meeting was called to order by the president, Dr. Wm. H. Garrison, at the Illini Club Rooms at 11:30 A. M.

The election of Delegates to the State convention of the Illinois State Medical Society to be held in Quincy early in May, the 75th anniversary, resulted in the election of Dr. W. T. Knox as Delegate, and Dr. F. N. McLaren as Alternate.

The Secretary read several communications from the State officials of the State Dept. of Registration and Education, which to us would seem an out and out whitewash, has been promised faithfully, to look after violators of the Medical Practice Act, but nothing doing, and seems now, that they don't intend to do anything.

Letter from Dr. Isaac D. Rawlings on Health Promotion Week, May 2-7.

At the hour of 12:30 adjournment was taken for dinner to the Hotel Lindsey where an excellent dinner was served, after dinner, the meeting was again called to order at the Illini Club Rooms.

An invitation to attend, elect a representative to the National Baby Congress and Health Exposition to be held in Chicago May 2-9 was read, Dr. H. W. Smith was elected Committeeman and the Secretary was instructed to notify Dr. R. H. Ferguson, Secretary of the Chicago Medical Society of his selection.

Motion carried, unanimously, that we as a Society go on record in opposition to House Bill No. 28, an act declaring the right of the People to organize into trade unions and associations and to regulate the procedure in Courts of Equity in relation thereto.

In the absence of Dr. F. H. Russell, Censor, the President appointed Dr. E. E. Jonett, Censor-protem. The Censors met and reported the next meeting, June 12, 1925, at the Carrollton Fair Grounds with a picnic for members and family.

At the last meeting the Society decided to take up the study of the Endocrine Glands. The Pituitary Gland was the one selected and the appointment of Dr. H. W. Smith, Essayest. This subject was presented in a paper which showed thought and a wonderful amount of study, was presented in a delightful way, being a comparatively new study, was the more interesting his paper took up and discussed diseases resulting from a disordered or abnormal function of the gland.

Discussion followed by all present. The matter of our meetings bring permanently, located more centrally

in the County, especially during the winter months and bad road season were discussed, and looked upon with favor, but no action taken.

The rain of today prevented many from coming.

The Society Adopted a Resolution Against the Child Labor Amendment from a real American Viewpoint:

WHEREAS, Congress has passed an Amendment to the Constitution which would give that body power to limit, regulate and prohibit the labor of persons under eighteen years of age, and

WHEREAS, Such an amendment would Vest in Congess the right to standardize employment and education of children and give the Federal Government the power to prohibit or limit to any degree that it might see fit the care, culture, education and employment of children, and in effect, to nationalize all children under eighteen years of age, and,

WHEREAS, The use of the catchy expression, "Child Labor" amendment, and the humanitarian features connected therewith, have served to create sentiment and excite sympathy of certain social welfare groups, and other well disposed people, who have thus unwittingly permitted themselves to be used by the enemies of the Government to aid and abet the passage of this bad measure, and,

WHEREAS, The ratification of this amendment for action is now before the State legislatures, and,

WHEREAS, This amendment will interfere with parental control, from the viewpoint of industry, thrift, and character and will substitute Federal bureaucratic control by remote, expensive and irresponsible authorities, and,

WHEREAS, Such regulation is in violation of the principles set forth in the Constitution and that such legislation should be left to the several States, and,

WHEREAS, The proposal to take away from the States and confer on the National Government those rights and powers specifically reserved to the States in the Constitution would be revolutionary and would change the principles on which the Government is founded, and,

WHEREAS, All persons of socialistic, communistic tendencies are strongly in favor of the ratification of said amendment by the States.

Be It Resolved, Therefore, That we, the Greene County Medical Society in regular session, March 13, 1925, do hereby declare that we are unalterably opposed to the ratification of the 20th amendment to the Constitution.

A rising vote of thanks was extended to Drs. Jonett and Hensler for their entertainment.

On motion adjourned at 4 P. M.

W. T. KNOX, M. D.
Secretary.

Marriages

FRANK AMOS CHAPMAN to Miss Katherine Howe, both of Chicago, Dec. 20, 1924.

J. RITTER SUTTER, of Edwardsville, to Miss Elizabeth K. Drexilius, March 7, 1925.

Personals

Dr. Irwin W. Bach, formerly of Tuscola, has been appointed physician to the Cunningham Home, Urbana, to succeed Dr. William M. Honn, resigned.

Dr. Raymond W. McNealy, Chicago, has been appointed chief surgeon and medical director of the Illinois Manufacturers' Mutual Casualty Association.

Dr. Myron W. Snell, Jacksonville, has been elected vice president and medical director of the American Bankers-Clover Leaf merger insurance companies.

The Chicago Roentgen Society had a symposium on the diagnosis and treatment of duodenal and pyloric ulcers, March 13, in which Drs. Dean Lewis, Albert E. Halstead, Milton M. Portis and R. D. Carman took part.

Dr. John Leeming addressed the Chicago Society of Industrial Medicine and Surgery, March 2, on "Some Difficulties in the Operation of Workmen's Compensation Act," and Dr. Carl Beck spoke on "Plastic Surgery of the Crippled Hand."

At the regular meeting of the Chicago Pathological Society, March 9, among others, Dr. Lemuel E. Day spoke on "Foot and Mouth Disease," and Dr. Max Pinner and Henry C. Sweany on "A Pathogenic B. Subtilis from a Patient Having Chronic Tuberculosis."

At a meeting of the Chicago Surgical Society, March 6, at Mercy Hospital, Dr. George Halperin spoke on "Post-operative Massive Collapse of the Lung," Dr. Philip H. Kreuscher on "The Substitution of the Erector Spinae for the Paralyzed Gluteal Muscles—A Stabilizing Operation," and Dr. Paul B. Magnuson on "Anatomy and Physiology of the Lower Back as Applied to Causes of Backache."

The Institute of Medicine of Chicago gave its first Ludvig Hektoen Lecture of the Billings Foundation at the City Club, March 27. Drs. George F. and Gladys R. H. Dick lectured on scarlet fever.

Dr. Porter P. Vinson, Rochester, Minn., addressed the Rock Island Medical Society, March 10, on "The Diseases of the Esophagus," and Dr. Jacob R. Buchbinder, Chicago, on "Surgical Consideration of the Dyspepsias."

At the regular meeting of the Chicago Tuber-

culosis Society, March 12, at the Brevoort Hotel, among others, Dr. Knud Secher, Copenhagen, who has done the clinical work for Dr. Mollgaard, spoke on clinical experiences with "Sanocrysin" in tuberculosis.

Dr. Max Thorek of Chicago has been elected corresponding member of the Surgical Society of Paris, France, following a lecture delivered by invitation before that society.

News Notes

—Cairo recently conducted a vaccination campaign against smallpox, in which out of 1,900 school children only fourteen remained unvaccinated when the campaign closed.

—Nettie Rupert was sentenced to one year in jail, and V. C. Wright and L. Glenn Barker to a year at hard labor on the penal farm, each also being fined $500, it is reported, in the county court at Charleston, February 24, for violating the medical practice act. The three defendants were chiropractors from Mattoon.

—Under a decision handed down by the appellate court of the fourth district at Mount Vernon, February 9, "herb doctors" are not allowed to practice in Illinois. The decision was given, it is reported, in affirming the conviction of one George F. Mash in the Perry County Circuit Court following the death of one of his patients. Mash was fined $200.

—The state director of health reports that an epidemic of measles is spreading over the state at the rate of about 150 new cases per day, having increased from an average of 300 cases weekly two months ago. In epidemic years measles causes more than 500 deaths in Illinois, a mortality greater than that from either scarlet fever, typhoid fever or smallpox.

—Three cases of leprosy have been reported along the North Shore, the latest victim being a former sergeant in the army who served in the Philippine Islands. He is at the Veterans' Hospital, Great Lakes Naval Training Station, and will be sent to the leprosy colony in Louisiana. The others were Zezus Barrentas and his brother Augustine of North Chicago.

—The city of Springfield has awarded a contract for a twelve million gallon water treatment plant, which will involve such features as mechanical clarifiers and carbonization chambers to remove the iron from the water and make it possible to clarify Sangamon River water, if that source should be used at any time. The project will also include a storage basin for purified water of the same capacity as the treatment plant.

—More than six times as many cases of smallpox have been reported in this state during the present year as were reported for the same period last year, the number of cases being 525 and 83, respectively. The most persistent foci, says the state department of health, are in St. Clair and Madison counties, where outbreaks are confined largely to East St. Louis and Alton. About ten cases at Northwestern University, Evanston, recently led to the issue of a general vaccination order affecting the student body.

—The new home for the department of physiology, physiological chemistry and pharmacology at the University of Chicago will be a six story building, facing Fifty-eighth Street, with its entrance where Ingleside Avenue now runs, the avenue having been vacated for that purpose. It will be a unit of the group of buildings for medical education which the university will erect in the near future, and for which funds have been provided independently of the university's $17,500,000 development program.

—At a joint meeting of the Chicago Neurological Society, the Institute of Medicine and the Chicago Pediatric Society, March 19, the subject for discussion was "Medical Aspects of Behavior Disorders in Children." Among the participants were Dr. Bert I. Beverly, Children's Memorial Hospital; Drs. David M. Levy and Herman M. Adler, of the University of Illinois; Dr. Isaac A. Abt, Prof. L. L. Thurstone, Prof. Frank N. Freeman, Ph. D., Dean John H. Wigmore and Prof. Thomas D. Eliot.

—An All-Community Health Pageant was held at the Masonic Temple, Sixty-first Street and Cottage Grove Avenue, March 13-14, under the sponsorship of the Jackson Park Branch of the Chicago Medical Society, the Illinois Federation of Women's Clubs, and with the cooperation of the Chicago Dental Society, Chicago Health Department, the state department of health and the Chicago Retail Druggists Association. Among others, Dr. Morris Fishbein, Editor, Journal of the American Medical Association; Dr. Henry B. Thomas, University of Illinois; Dr. George T. Palmer, and Dr. Robert W. C.

Francis gave addresses. In the old people's contest, a prize was given for the most healthy person past 70 years of age.

—Stating that Illinois has been backward in maternity and child hygiene work, compared with other states, the state commissioner of health announces that correspondence courses of instruction for prospective mothers have now been arranged. Every prospective mother in the state, who desires, may enroll. The course will begin with nine lessons in antenatal instruction. Practical questions dealing with preventive problems will be promptly answered by especially qualified physicians, but treatment will be left entirely to private physicians. This is part of a program in maternity, infant and child hygiene, which is a cooperative undertaking participated in by the state medical society, the state federation of women's clubs and other organizations.

—The Chicago Council of Medical Women will meet April 28, 1925, at 8 P. M., at the American College of Surgeons, 40 East Erie Street. The year's study of hemorrhage will close with the following program: Hemorrhage of the Anterior Eye, Ione F. Beem; Hemorrhage of the Posterior Eye, Beulah Cushman; Hemorrhage of the Ear, Alice Hall; Tonsillar Hemorrhage, Gertrude Thompson; Nasal Hemorrhage, Margaret M. Jones. Discussion opened by Emily Selby. Dinner at 6:30 at the Petit Gourmet, 615 North Michigan Avenue. Members of the profession are cordially invited to both the dinner and the program. Anna E. Blount, President; Lena K. Sadler, Secretary.

—La Salle County Medical Society elected the following officers: President, S. E. Parr, Ottawa; vice-president, J. W. Geiger, La Salle; secretary and treasurer, E. E. Perisho, Streator; delegate, Wm. Schoenneshoefer, Streator; alternate, Jas. S. Green, Utica. Board of Censors, P. M. Burke, La Salle, Roy Sexton, Streator, B. J. Nauman, Peru.

—Coles-Cumberland Medical Society elected the following officers: President, R. H. Craig; vice-president, Norman Starr; secretary-treasurer, E. E. Richardson; delegate, C. E. Morgan. Board of Censors, H. A. Shaffer.

—Fulton County Medical Society elected the following officers: President, R. H. Maguire, St. David; vice-president, C. N. McCumber; secretary-treasurer, C. D. Snively; delegate, E. P. Coleman. Board of Censors, A. C. Cluts, W. L. Crouch and W. B. Gray.

Deaths.

Carl Bernhardi, Sr., Chicago; University of Berlin, Germany, 1867; a Fellow A. M. A.; aged 81; died, March 3, at the North Chicago Hospital, of pneumonia.

George Martin Blackburn, Minier, Ill.; University of Wooster Medical Department, Cleveland, 1869; Civil War veteran; aged 80; died, February 4, at the Brokaw Hospital, Bloomington, following an operation for strangulated hernia.

Albert Monroe Drew, Decatur, Ill.; Miami Medical College, Cincinnati, 1873; member of the Illinois State Medical Society; aged 76; died, March 1, at the Illinois Masonic Home, Sullivan, of heart disease.

Asa Roy Freeman, Bloomington, Ill.; St. Louis University School of Medicine, 1907; member of the Illinois State Medical Society; aged 42; died, February 20, of asphyxia due to gas presumably self-administered.

George Joseph Gordon, Chicago; University of Illinois College of Medicine, 1915; aged 34; was shot and killed, March 14.

Daniel R. Grover, Chicago; Dunham Medical College, Chicago, 1899; aged 71; died, March 7, of cerebral hemorrhage.

Harry Partee Hurley, Chicago; Cleveland Medical College, 1897; aged 64; died, March 13, of cerebral hemorrhage.

Charles W. Martinie, Mount Vernon, Ill.; Miami Medical College, Cincinnati, 1874; aged 77; died, February 12.

George Warner Mosher, Chicago; Rush Medical College, Chicago, 1905; a Fellow A. M. A.; member of the Chicago Laryngological and Otological Society; aged 46; died, March 19, of a self-inflicted bullet wound.

James Mitchell Neff, Chicago; Medical Department of the University of Illinois, Chicago, 1898; a Fellow A. M. A.; formerly assistant professor of surgery, Northwestern University Medical School, Chicago, and instructor of surgery, Rush Medical College, Chicago; member of the Chicago Surgical Society; consulting surgeon to the Illinois Central Railroad; on the staffs of the Illinois Central and Roseland hospitals, and at one time on the staffs of the Mercy and St. Luke's hospitals; served in France with the British army during the World War; aged 50; died, March 9, at the Presbyterian Hospital, of cerebral hemorrhage.

Richard Joseph Piper, Chicago; University of Michigan Medical School, Ann Arbor, 1875; formerly city physician; aged 75; died, March 6, of uremia.

Otha William Fenton Snyder, Chicago; Physio-Medical Institute, Cincinnati, 1878; aged 75; died, February 19, of uremia and chronic nephritis.